Initiation of Term Newborn Skin-To-Skin Contact in the Operating Room Following Scheduled Cesarean Section: A DNP Capstone Project

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Abstract

Breastfeeding provides many short and long-term health benefits to the mother and the newborn, however breastfeeding rates are lower among women who deliver via Cesarean Section as compared to those who deliver vaginally. Key initiatives to improve successful breastfeeding include skin-to-skin contact soon after birth, initiation of breastfeeding within an hour of birth, limited maternal-newborn separation and frequent on-demand feedings. Despite the multiple health benefits to both the mother and the newborn, hospital policies and existing practices can be a significant barrier to breastfeeding. The purpose of the project was to implement newborn skin-to-skin contact in the operating room as the standard of care, for all mothers who indicate an intention to breastfeed, and who deliver a term newborn via a scheduled Cesarean Section at The Ohio State University Wexner Medical Center.

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Chapter One

Introduction to the Problem

According to the American Academy of Pediatrics (AAP) (2012), breastfeeding and human milk is the gold standard for infant feeding and nutrition though the public health implications of breastfeeding extend beyond personal maternal feeding choices. The AAP policy statement regarding *Breastfeeding and the Use of Human Milk* (2012), affirms that breast milk provides protection for newborns from conditions such as asthma, necrotizing enterocolitis, respiratory tract infections and Otis media. A reduced risk of sudden infant death syndrome (SIDS), Type 2 Diabetes and obesity are additional health benefits that breastfeeding provides to the newborn (AAP, 2012). The maternal benefits of breastfeeding include a decrease in postpartum blood loss, and postpartum depression, as well as a long-term decreased risk for developing Type 2 diabetes and breast or ovarian cancer (AAP, 2012). If 90% of newborns were exclusively breastfed for six months as is recommended by the World Health Organization (WHO) and the AAP, the United States would save roughly $13 billion per year and prevent nearly one thousand infant deaths across the U.S. (Ohio Department of Health (ODH, 2013). In spite of these benefits, Ohio has the lowest rate of breastfeeding initiation in comparison to other states in the region, and few mothers continue to exclusively breastfeed beyond eight weeks postpartum (ODH, 2013).

While a woman's decision to breastfeed is influenced by many factors, it is recognized that certain populations have lower breastfeeding rates overall. In particular, breastfeeding rates

are lower among women who deliver via cesarean section (C/S) as compared to those who deliver vaginally (Hung & Berg, 2011; Zwedberg, Blomquist & Sigerstad, 2015). Increasing breastfeeding in this group would improve outcomes for this subset of newborns.

In general, early skin-to-skin contact (i.e., placing the naked baby prone on the mother's bare chest after delivery) is associated with higher rates of breastfeeding initiation and breastfeeding at discharge (Redshaw, Hennegan & Kruske, 2014). Mothers and newborns that experience early skin-to-skin contact are more likely to have a successful breastfeeding experience during the early postpartum period (Bramson et al., 2010). Evidence for this same effect, specifically for newborns delivered via C/S, are more limited. However, Stevens, Schmied, Burns, and Dahlen (2014) describe compelling evidence suggesting that skin-to-skin contact for this group of newborns would be beneficial.

During the first hour after birth, newborns experience a period of alertness especially conducive to breastfeeding initiation. Innate breastfeeding behaviors are triggered, and the well newborn begins salivating, head bobbing and rooting (Stevens, Schmied, Burns & Dahlen, 2014). The newborn may actually independently move toward the mother's nipple and begin to suckle (U.S. Department of Health and Human Services, 2010). Medical and nursing practices and routines must adjust to allow breastfeeding to occur within the first hour after a vaginal or cesarean delivery (AAP, 2012).

Early skin-to-skin contact provides several physiologic benefits for both the mother and the newborn in addition to the positive effect on breastfeeding initiation (AAP, 2012). For the newborn, there is evidence to support improved thermoregulation and decreased stress, as evidenced by a reduction in salivary cortisol levels (Takahashi, Tamakoshi, Matsushima & Kawabe, 2011). For the mother, skin-to-skin contact provides the opportunity for early bonding

and increases patient satisfaction (Stevens et al., 2014). According to a randomized controlled trial by Nolan and Lawrence (2009), time to the first breastfeeding was quicker, and newborn's temperature and respiratory rate stabilized faster in the operating room with minimal separation from the mother after a C/S. A randomized controlled trial by Gouchon, Gregori, Picotto, Nangeroni & Giulio (2010), also supports the importance of early skin-to-skin contact between a mother and her newborn. Gouchon et al. (2010) compared temperatures of newborns who participated in skin-to-skin contact versus those who had routine care (dressed or under the radiant warmer), and they found that newborns who had skin-to-skin contact within one hour of delivery did not have hypothermia, which is a common concern. Additionally, the length of early skin-to-skin contact has a positive effect on breastfeeding duration. The longer a mother and newborn are in skin-to-skin contact, the longer the newborn exclusively breastfeeds (Bramson et al, 2010).

There are dimensions beyond quality improvement that influence the necessity for practice changes that support skin-to-skin in the operating room. Healthcare providers are obligated to treat like patients, in a like manner (Fry, Veatch, & Taylor, 2011). When clinically feasible, all patients should be offered the same evidence-based intervention(s) that increase chances for breastfeeding success and enhance the breastfeeding experience regardless of convenience to the practitioners. The opportunity for the mother-baby dyad who delivers by C/S to benefit from skin-to-skin contact is an issue of social justice. As the responsibility of caring for the well newborn in the operating room is typically under the purview of nurses, this topic is relevant to nursing practice.

The Ohio State University Wexner Medical Center (OSUWMC) is a large academic medical center located in central Ohio that delivered over 4,800 births during fiscal year 2015.

As a nursing leader within this health system, and an active member of The Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN), an organization that advocates strongly on behalf of breastfeeding as the best choice of infant feeding, this Doctor of Nursing Practice (DNP) student is concerned that women who deliver via C/S are not offered the same opportunity for skin-to-skin contact with their newborns as women who delivery vaginally. In comparison to other states in the region, Ohio has the lowest rate of breastfeeding initiation and few mothers continue to exclusively breastfeed beyond eight weeks postpartum (ODH, 2013). In the first quarter of 2014, The Joint Commission, an independent not-for-profit organization that accredits and certifies health care organizations, began including exclusive breast milk feeding (considering mother's choice) as one of several required perinatal core measures. Data collected by OSUWMC in compliance of this reporting requirement, reveals that exclusive breast milk feeding through the end of 2014 did not exceed 38.1%. Third quarter 2015 data indicates an increase in exclusive breast milk feeding to 68.4%. As these statistics indicate, OSUWMC remains below the Healthy People 2020 breastfeeding goal of 81% initiation (ODH, 2013). Despite the multiple health benefits to both the mother and newborn, hospital policies and existing practices can be a significant barrier to breastfeeding (Morrison & Ludington-Hoe, 2012).

Purpose of the Project

The purpose of this DNP capstone project is to improve breastfeeding rates for mothers intending to breastfeed who are undergoing routine, scheduled cesarean delivery of a term newborn at OSUWMC. According to the Institute of Medicine (2014), all healthcare should be delivered in a safe, effective, patient centered, timely, efficient and equitable manner. Hospital practices are often barriers when it comes to providing the six dimensions outlined by the

Institute of Medicine (IOM). This DNP project will change the current workflow of healthcare providers within the Department of Women and Infants at OSUWMC by making skin-to-skin contact in the operating room (OR), the standard of practice for all scheduled term deliveries.

Significance of This Project to Nursing and Health Care

This clinical project is an important priority because breastfeeding provides many short and long-term health benefits to the mother and the newborn. This intervention would enhance breastfeeding rates and ultimately the overall health of Ohio Citizens. Ohio has the lowest rate of breastfeeding initiation in comparison to other states in the region, and few mothers continue to exclusively breastfeed beyond eight weeks postpartum (ODH, 2013). OSUWMC encourages skin-to-skin contact after a vaginal birth, however this same practice is not currently offered in the delivery room after a C/S. If 90% of newborns were exclusively breastfed for six months as is recommended by the World Health Organization (WHO) and the AAP, there would be a significant reduction in healthcare cost and infant mortality (ODH, 2013).

Project Objective

The objective of this project was to develop and implement a protocol that supports newborn skin-to-skin contact in the operating room as the new standard of care for all term, scheduled C/S deliveries whose mothers intend to breastfeed.

Chapter Two

Clinical Practice Problem Statement

For women intending to breastfeed and undergoing scheduled cesarean section at term (P), what is the effect of skin-to-skin contact with the newborn in the operating room (I) on breastfeeding rates (O) compared with women intending to breastfeed and undergoing scheduled cesarean section at term whose newborns who do not have skin-to-skin contact with their mother in the operating room (C), during the initial hospital period (T)?

Evaluation of the Literature

An exhaustive search of the literature was completed. The literature search was organized into three main topic headings. Those subject headings included:

- Skin-to-skin contact in the operating room
- Physiologic benefits of skin-to-skin contact
- Skin-to-skin contact and its effect on breastfeeding

The initial search was limited to include only articles written within the past five years (2010-2015). However, several important articles published between 2005 and 2010 were included as these were foundational to more contemporary literature.

Skin-to-Skin Contact in the Operating Room. This portion of the literature review was completed in the CINAHL and PubMed databases. Search term #1 included *skin-to-skin contact* or *cesarean section*. Search term #2 included *cesarean section*, *skin-to-skin contact* or *kangaroo-mother care method.* During one of the PubMed searches, *breastfeeding*, was used as the third search term. Fourteen articles resulted from the use of the above-mentioned search terms.

Physiologic Benefits of Skin-to-Skin Contact. For this portion of the literature review, CINAHL and PubMed were the databases used. Search term #1 included *physiologic effects,*

skin-to-skin contact, cesarean section, physiologic benefits or *short-term benefits*. Search term #2 included *skin-to-skin contact, physiologic effects, kangaroo care, skin-to-skin, newborn transition* or *kangaroo mother-care*. When searching this topic, occasionally a third search term was used. These terms included *newborns, cesarean, skin-to-skin contact, after cesarean section* or *kangaroo mother-care*. Nine articles resulted using the above search terms for the physiologic benefits of skin-to-skin contact.

The Effect of Skin-to-Skin Contact on Breastfeeding. For this topic, CINAHL was the only database searched. The only search term used for search term #1 was *skin-to-skin contact*. Search term #2 included *breastfeeding* or *breastfeeding outcomes*. For search term # 3, cesarean *section* was the term used. This search resulted in fourteen articles.

Synthesis of the Literature. In addition to the articles found during the primary literature search**,** four additional articles of interest were identified that were referenced within articles found during the primary literature review. Of the 37 articles found during the exhaustive search, two of the articles were excluded, as the population of interest was preterm newborns. One Spanish language article was excluded as there was not an English version available. Seven articles were also excluded because they were innovation papers detailing the implementation process of skin-to-skin contact in a specific facility. After duplicate articles were discarded, there remained twelve articles that were reviewed and evaluated for strength of the evidence, quality of the evidence and the generalizability of the evidence to this DNP student project. Of the twelve articles, one was a systematic review, five were randomized controlled trials, one was a cohort study, three were qualitative or descriptive studies and two were expert opinion articles. Table 1 in the appendix section of this document, provides an overview of the Levels of

Evidence Synthesis Table. Table 2 provides the Evaluation Table for each of the 12 articles used as part of the literature review for this DNP project.

Skin-to-Skin Contact in the Operating Room. The transition from intrauterine to extrauterine life represents one of the most dynamic events that a human will experience during their life cycle (Takahashi et al., 2011). Early skin-to-skin contact is not a routine practice after a C/S delivery (Bramson et al., 2010). According to a special report by the American College of Obstetricians and Gynecologist (ACOG) (2007), the immediate postpartum period should allow a mother and her newborn to experience optimal bonding that includes immediate physical contact, preferably in the form of skin-to-skin.

There were four articles from this portion of the literature review that used healthy, low risk women with normal, singleton, term newborns as their patient population. Two of the articles focused exclusively on C/S patients and the other two articles included patients who delivered either vaginally or by C/S. The randomized control trial article by Nolan and Lawrence (2009), and the expert opinion article by Phillips (2013), both looked at breastfeeding initiation, thermoregulation and cortisol levels of the newborn. Both of the articles supported improved breastfeeding initiation by the newborn after participating in skin to skin contact, however only one of the articles demonstrated statistical significance. Both articles stated that the newborn had improved thermoregulation during skin-to-skin contact as compared to being wrapped in a blanket or kept under a radiant warmer. The Phillips (2013) article showed evidence that newborns have a decreased salivary cortisol level indicating a decreased stress response, after participating in skin-to-skin contact. The Nolan and Lawrence (2009) article included 50 participants, and also evaluated salivary cortisol level of newborns. However, their study showed an increase level of cortisol. The authors stated that 30% of the salivary cortisol

levels were insufficient for proper analysis and hence the results of the cortisol testing from their study should be used with caution.

The remaining three articles found were not used as supporting evidence for project initiation, however these articles were kept as reference articles. The articles contained key points, metrics and tips on interprofessional collaboration that would be beneficial to consider when developing the protocol for this skin-to-skin project.

Physiologic Benefits of Skin-to-Skin Contact. There are numerous benefits of skin-to-skin contact documented in the literature. The literature states mothers who have participated in skin-to-skin contact have improved bonding and attachment to their newborns (Haxton, Doering, Gingras & Kelly, 2012). They also have an increased sense of mastery and confidence in their ability to breastfeed (Moore, Anderson, Bergman & Dowswell, 2012). Women with a decreased sense of confidence are three times more likely to wean early and have a perceived insufficient milk supply (Moore et al., 2012). Considering all the physiologic benefits of skin-to-skin contact, this intervention would be beneficial for all patients, regardless of their feeding choice. For the purposes of this project however, this DNP student concentrated only on those mothers who intended to breastfeed. In addition to the emotional connectedness between a mother and her newborn, there are physiologic and biochemical benefits to skin-to-skin contact (Takahashi, Tamakoshi et al., 2011). Temperature regulation of the newborn is one of the physiologic benefits of skin-to-skin contact. According to Moore et al. (2012), newborns who participated in skin-to-skin contact with their mother had significantly less temperature variability, and were more likely to remain in the neutral thermal range of 36.5 to 37.5 degrees centigrade. Temperature stability occurs provided the newborn is dried, the wet linens are removed, and a

dry hat is placed on the infant. The mother-infant dyad should also have a pre-warmed blanket across the newborns' back during the skin-to-skin contact experience (Moore et al, 2012).

From a biochemical perspective, the literature supports a significant reduction in salivary cortisol levels for term newborns that are placed skin-to-skin with their mothers within five minutes of delivery, and remain in skin-to-skin contact 60 to 120 minutes after birth (Takahashi et al., 2011). There are no known disadvantages to either immediate or early skin-to-skin contact after a C/S (Stevens et al., 2014).

The three major studies from this category were all conducted in foreign countries. One study was conducted in Japan, one in Spain and the other in Italy. All three of the studies focused on healthy, singleton full-term infants, and mothers who had uncomplicated pregnancies. One article focused solely on newborns who delivered via C/S, one evaluated the physiological effects in vaginal deliveries and the third evaluated the physiologic effects in both vaginal and C/S patients. Two of the three studies looked at the effect that skin-to-skin contact had on breastfeeding exclusivity and thermoregulation. Both the study from Marin et al (2010) and Gouchon et al (2010) showed that newborns that have skin-to-skin contact with their mother have a statistically significant increase in breastfeeding exclusivity and they have better thermoregulation. The Gouchon et al (2010) study also stated that breastfeeding initiation and maternal satisfaction was higher with skin-to-skin contact. The third study from this group was from Takahashi et al. (2011). Their study measured the salivary cortisol levels of the newborns at different points in time. Their study showed a decrease in salivary cortisol of the newborn when exposed to skin-to-skin contact soon after birth.

The Effect of Skin-to-Skin Contact on Breastfeeding. The AAP recommends that healthy newborns remain in skin-to-skin contact with their mother until after the first

breastfeeding (Bramson et al., 2010). The longer the delay between delivery and the first feeding, the more likely the newborn is to receive supplementation (ACOG, 2007). According to Bramson et al. (2010), the longer the mother-infant dyad experience early skin-to-skin contact during the first three hours after birth, the more likely that the mother will continue to exclusively breastfeed during the hospital stay.

In this section, 5 articles were reviewed. The Redshaw et al. (2014) study was from Australia and the study by Moore et al. (2012) was a randomized controlled trial. The other three articles looked at the effect of breastfeeding initiation after skin-to-skin contact. Moore and Anderson (2007), Moore et al. (2012) and Carfoot, Williamson and Dickerson (2005) all demonstrated an increase in breastfeeding initiation with skin-to-skin contact. The Carfoot et al. (2005) article also stated an increase in maternal satisfaction and newborn thermoregulation after experiencing skin-to-skin contact between the mother and newborn. The article by Bramson et al. (2010) noted an increase in exclusive breastfeeding during the hospital stay when skin-to-skin contact occurred soon after birth. The National Guideline Clearinghouse from the Agency for Healthcare Research and Quality (AHRQ) was searched as well. Articles and other supporting evidence for breastfeeding were found, but none that directly tied skin-to-skin contact to breastfeeding outcomes.

Summary of the Literature. Separating the mother and the newborn after a C/S can lead to delayed breastfeeding, decreased maternal satisfaction and a decrease chance of the mother and/or newborn from benefiting from the physiologic and neurobehavioral benefits that skin-to-skin contact offers (Stone, Prater & Spencer, 2014). Separation of the mother and newborn after delivery has been standard practice in many healthcare organizations (Morrison & Ludington-Hoe, 2012). Evidence shows that many hospital practices affect the exclusivity and duration of

the breastfeeding experience for the mother and newborn throughout the first year of life (Bartick, Stuebe, Shealy, Walker & Grummer-Strawn, 2009). There is a need for a conceptual change in the way healthcare organizations provide care to the mother and infant. As mentioned previously, medical and nursing practices and routines must adjust to allow breastfeeding to occur within the first hour after a vaginal or cesarean delivery (AAP, 2012).

Evaluation of Internal Evidence

Internal Data Collected. Per institutional policy, a *Data Quality Release Form* was completed. The form was approved by the Director of Nursing Quality and the Chief Quality Officer at OSUWMC, allowing access to the Electronic Medical Record (EMR) system and historical breastfeeding data for OSUWMC. Data collected included the gestational age of the newborn, newborn temperature in the operating room and recovery room, whether or not the newborn breastfed in the recovery room and whether or not the newborn was breastfeeding at the time of hospital discharge.

Prior to implementing this DNP project in the OR on Labor and Delivery, baseline data was collected that included newborn temperature in the OR, newborn temperature in PACU, how many mothers breastfed their newborn in the PACU and what percent of those mothers were still feeding breastmilk to their newborn upon discharge from the hospital. This baseline data consisted of a retrospective chart review of the operative deliveries at OSUWMC during November 2015. The only charts that were reviewed were those in which the mother stated prior to delivery that her feeding choice was breastfeeding, the gestational age of the newborn was 37 completed weeks or higher, and the C/S was scheduled ahead of time. C/S deliveries that occurred urgently, STAT or for failure to progress (FTP), were not used in this review. After all outlying cases were removed, there were 40 charts from November 2015 that were reviewed by

this DNP student. The findings from the November retrospective chart review are described below.

- 24 of the 40 mothers breastfed their newborn in the PACU (Appendix 2)
    - 71% of those mothers (17 of the 24) were feeding their newborn breastmilk only at the time of hospital discharge
    - 21% of those mothers (5 of the 24) were feeding a combination of breastmilk and formula to their newborn at the time of hospital discharge
    - 8% (2 of the 24) were feeding their newborn formula only at the time of hospital discharge

A request was also placed with the Information Warehouse, in an effort to obtain the total number of patents who delivered by C/S at OSUWMC in calendar year 2015 (Appendix 3). From that report, there were 770 patients during calendar year 2015 who delivered a healthy, term newborn by C/S. Of those 770 patients, 80% of them intended to breastfeed their newborn, however only 47% of them were breastfeeding at the time of discharge from the hospital. Prior to implementing this DNP project, skin-to-skin contact in the OR was rarely done. For example, during calendar year 2015, only 4% of the term, scheduled C/S have documentation of skin-to-skin contact in the OR (Appendix 3).

Routine Care Observed. OSUWMC is consistent with many other hospitals across the country. Newborns delivered by C/S are routinely separated from their mother soon after birth and are not given the opportunity for skin-to-skin contact in the operating room. At OSUWMC, standard practice is that the newborn is handed from the surgical field to a member of the neonatology team who takes the baby to the radiant warmer where the newborn is dried, stimulated, vital signs are taken and the Apgar scores are assigned. Once the neonatology team

determines the newborn to be stable, the newborn is either left under the radiant warmer, or is wrapped in a blanket and held by the father or support person, typically at the head of the operating table where the mother can view and touch the baby. Once the surgical repair of the mother is complete and she is ready to exit the operating room, the newborn is handed to the mother, and the mother and newborn are transferred together to the recovery room on the gurney.

Synthesis/Summary of Internal Evidence. The background data demonstrated that the majority of mothers stated an intention to breastfeed their newborn. However, the number of those mothers who were still feeding their newborn breast milk at discharge was significantly lower. During calendar year 2015, OSUWMC delivered 770 healthy, full term newborns via C/S. 80% of those mothers stated an intention to breastfeed their newborn, however only 4% of those newborns were in skin-to-skin contact with their mother for at least 30 minutes within the first hour of birth. Of the 770 patients, only 47% of them were breastfeeding at the time of hospital discharge. While this data may appear that the institutional practices fell short, up until this point in time, this type of data has never been pulled nor evaluated for C/S deliveries, nor have we questioned the current practices/procedures within the operating room setting.

Theoretical Basis

Conceptual Framework. The *Diffusion of Innovations Theory for Organizational Change* was used as the conceptual framework for designing the implementation strategy for the project. Everett Rogers, a professor of communications, is the individual who popularized this theory in 1962. A bell-shaped curve is used to depict the rate of adoption by individuals whenever there is a new innovation or change taking place within an organization (Melnyk & Fineout-Overholt, 2011). As shown in Figure 1, the group on the far left of the bell curve are known as the innovators. This group makes up approximately 2.5% of individuals and tends to

represent those individual who think outside the box and recognize opportunities for change (Melnyk & Fineout-Overholt, 2011). In the case of this project, this DNP student would fit into the innovator category. The group to the right of the innovators on the bell shaped curve, are the early adopters. Also known as the opinion leaders, this group makes up 13.5% of individuals. It is this group of individuals that are highly influential within an organization and encourage others to adopt new strategies (Melnyk & Fineout-Overholt, 2011). As one moves from left to right across the curve, there are the early majority, the late majority and then the laggards. This theory is an appropriate one for this type of innovation project, as it emphasizes which group of individuals are the ones that can help the innovator gain momentum with project implementation. In practice, this resulted in a collaborative approach with the nursing and physician leaders relevant to the success of the project. One key strategy was to get "early adopters" recommendations from unit and department leaders. These individuals played important roles in project implementation and institutional culture change.

Model of Evidence-Based Practice. The model of evidence-based practice used was the *Model for Evidence-Based Practice Change* by Rosswurm and Larrabee (1999). This model is based on theoretical and research literature related to change theory and evidence-based practice, and is meant to guide practitioners through the process of developing and then integrating an evidence-based practice change into an organization (Rosswurm & Larrabee, 1999). There are several key reasons why Rosswurm and Larrabee's Model for Evidence Based Practice Change is the most appropriate model for this project. First, this model involves stakeholders from the very beginning. These are the individuals who know first-hand the intricacies of their daily practice. Secondly, this model emphasizes review of the evidence. While this might sound like an obvious requirement whenever an innovation or change in practice is proposed, this step is

often overlooked. Thirdly, this model emphasizes the need for periodic monitoring of the outcomes. The control component of this model is critically important to ensure that the process is performing at the desired level (Ransom, Joshi, Nash & Ransom, 2008). Lastly, as presented in Figure 2, the steps in Rosswurm and Larrabee's model are very similar to those found in the Define, Measure, Analyze, Improve and Control (DMAIC) approach for quality improvement that is used at OSUWMC (Figure 3). Given that the DMAIC model is a familiar quality improvement tool used at OSUWMC, Rosswurm and Larrabee's model is a logical model for this project.

Project Alignment with Organizational and Departmental Goals

This project to initiate skin-to-skin contact after scheduled cesarean section took place in the Department of Women and Infants, Labor and Delivery unit at OSUWMC. Since 2009, The Department of Women and Infant Nursing have been utilizing the concept of *Family Centered Maternity Care* as the driving principle for care delivery within the department. Celeste Phillips, the creator of the *Family Centered Maternity Care* (FCMC) concept, believes that the hospital/patient relationship is important and should offer a comprehensive product, not just periodic services. The ten guiding principles to FCMC are presented in Table 3. Principle #1 aligns with this project, as childbirth should be considered a state of wellness, not illness. If a mother has to have a cesarean section, which is considered to be major surgery, this project is incorporating elements of a normal delivery (i.e. skin-to-skin contact) into the operating room, so that the mother and newborn can benefit from that experience.

> Principle #1: "Childbirth is seen as wellness, not illness. Care is directed to maintaining labor, birth, postpartum, and newborn care as a normal life event involving dynamic emotional, social and physical change" (Phillips & Fenwick, , 2010, p. 2).

Principle #4 also aligns nicely with this DNP project. Even though the mother must have a C/S, the interdisciplinary team encourages and facilitates best practice initiatives that will enhance patient outcomes and provide the family with the birthing experience they desire.

> Principle #4: "The hospital team helps the family make informed choices for their care during pregnancy, labor, birth, postpartum and newborn care, and strives to provide them with the experience they desire" (Phillips & Fenwick, 2010, p. 3).

The institutional change initiated through this project is also in alignment with the mission of OSUWMC. The medical centers' mission is "to improve people's lives through innovation in research, education and patient care" (OSUWMC, 2011). This DNP project focused on providing skin-to-skin contact, an evidence-based initiative, to mothers who deliver via C/S so that they too have the opportunity to experience the short and long-term health benefits of this intervention.

Recommendations Summary

The evidence in the literature supports skin-to-skin contact between a mother and the term newborn, immediately or very soon after birth, regardless of the delivery method (American College of Obstetricians and Gynecologist (ACOG), 2007; Bramson et al., 2010; Marin et al., 2010; Takahashi et al., 2011). The position statements from all of the relevant professional organizations are in agreement with this as well (AAP, 2012; ACOG, 2007; AWHONN, 2015). Based on its own internal data, OSUWMC falls short of goals for breastfeeding initiation. Skin-to-skin contact is routine after a vaginal delivery, but this best practice intervention had not yet carried over into the operating room setting. This DNP student recommends that OSUWMC adopt skin-to-skin care in the operating room after scheduled term cesarean sections as the new standard of care.

Chapter Three

Plan for Implementation of Practice Change

Communication. OSUMWC is a level III maternity center where women deliver more than 4,800 newborns each year. The size of the organization, and the fact that it is an academic teaching institution, adds to the complexity of this project. First, buy-in from the Nursing Director for the Department of Women and Infants, as well as the Nurse Manager of Labor and Delivery, was accomplished. Both individuals signed a letter of support endorsing the implementation of this project in the operating rooms within the Labor and Delivery unit at OSUWMC. Individuals from five main stakeholder groups (project champions) were included in the education, planning and implementation of this project. Those groups included Registered Nurses (RN), Obstetricians, Neonatologist, Anesthesiologist and the Labor and Delivery nursing leadership team. Their personality, eagerness to adopt change within their practice, and their sphere of influence all were taken into consideration prior to asking them to be a project champion. Out of courtesy, a letter was sent to the physician leaders (Obstetric, Neonatology and Anesthesia) within the department even though they were not chosen as the project champions. All OB physician leaders acknowledged receipt of the email and stated their support for this project. The neonatology physician leaders did not respond to the email, but they verbally stated their support of this project during an informal face-to-face conversation in L&D. No response was received from the anesthesia physician leader until after the project went live. Prior to go-live, no email was received from this individual, nor did he state an objection during a mutually attended meeting within the department. The lack of response by this individual was not unexpected. According to the *Diffusion of Innovation Theory for Organizational Change*, this physician would be considered to be from the laggard category on the adoption curve. Ideally

these are not the type of individuals one would seek out to help champion a change, however due to this individual's position within the department, the attempt to communicate with him was important.

The project champions from each of the five stakeholder groups were contacted and encouraged to attend one of the 2 informational meetings scheduled on December 14 and 15th, 2015. The meeting dates and times were selected after a review of the physician and nurses schedules. Emphasis was placed on picking times when the majority of the staff were scheduled to work, thus increasing the likelihood of personal interaction and attendance at the informational meeting. Several of the physician champions responded to say that they would not be able to attend, but they were interested in receiving the information. Due to the unpredictable and infrequent visits to OSUWMC by one of the physicians, finding a mutually agreeable time to meet and discuss this project was impractical. As a result, the information was emailed to the physician and she was encouraged to contact me if she had questions or concerns regarding the content. No concerns were voiced. The other physician who could not attend the information session(s) was the anesthesiology champion. A meeting time was arranged and that individual was presented with the proposed project, supporting literature and draft protocol in a one to one meeting. The only feedback received was her agreement that at no time, should the anesthesiologist be responsible for the newborn during skin-to-skin contact. The Nursing Director, the L&D Educator, several of the Neonatal Nurse Practitioners (NNP), as well as several of the RN champions attended the informational session. The clinical problem was discussed, along with the results of the literature review and supporting evidence. The draft protocol was shared and the project champions were encouraged to provide feedback. The L&D nurses provided feedback in the form of clarifying language. As an example, instead of saying

"the second nurse", they encouraged the document to say "baby nurse". This change in terminology clarified the role of the nurse using language already being used in the unit. Other than suggestions for wording, there were no requests for content changes. Project champions who were not able to attend one of the scheduled informational meetings, were contacted individually to ensure that they too had all the information and all their questions were answered. Recognizing and validating the concerns of the teams regarding potential barriers and. involving them in creating feasible solutions was also important and critical to the success of this project. Existing staff meetings and operation councils were utilized to further expand the message that skin-to-skin care in the OR was becoming standard of care. OSUWMC has an OB Operations Council that is made up of an interdisciplinary team s from obstetrics, anesthesia, neonatology and nursing. This council meets monthly to discuss quality initiatives or areas of concern regarding patient care. The highlights of this project were presented to the interdisciplinary team at a January 2016 meeting. Attendees at that meeting included OB attending's, OB residents, Nurse Midwives, Neonatologist, Anesthesiologist, nurse leaders, Labor and Delivery (L&D) staff nurses and the L&D nurse educator. This DNP student also attended all four of the L&D January staff meetings (January 12th and 14th, 2016). The basic principles of this project, the supporting literature and the protocol were shared with the staff nurses and OR techs that were in attendance. Prior to the January 26, 2016 project go-live, an ISBAR (Introduction, Situation, Background, Assessment and Recommendation) communication document was created and shared with the staff describing the upcoming practice change (ISBAR is the standardized format for communication that is used at OSUWMC) (Refer to Table 4). In addition to the ISBAR document, a skin-to-skin contact FAQ was also created and shared with the staff (Refer to Table 5). The FAQ document defined skin-to-skin contact, briefly described the benefits of

skin-to-skin contact, and alerted them to the importance of proper positioning so that the newborns' airway remains open and patent.

Time Line. Figure 4 represents the original timeline that was used to guide this project. As with many projects, some steps of the process of practice change may take longer than anticipated. The original timeline estimated a go-live for skin-to-skin contact in the OR beginning mid-November of 2015. However, go-live did not occur until January 26, 2016. In this case, the delay in implementation was due to some changes in the process for DNP student project approval at the OSUWMC, and the number of approval steps required prior to project initiation. Originally, an *Institutional Review Board* (IRB) submission was written and submitted. Soon thereafter, a *Human Subjects Research Assessment Form* was created and implemented by the Ohio State University College of Nursing. Through a question and answer format, the form leads the student through a process of determining a project status as a quality improvement project or research requiring IRB approval. Through this process was determined that this DNP project was indeed an evidence-based quality improvement project and the IRB submission was retracted. Other steps required for project approval included review by Graduate Student Feasibility Review Committee and the Privacy Officer of the OSUWMC. After receiving approval by these groups, project planning, data collection and implementation began.

Feasibility and Cost. The implementation of this DNP project impacts the workflow of many different individuals within the operating room. Moran-Peters, Zauderer, Goldman, Baierlein and Smith (2014) described a change in workflow for sterile drape placement, type of medications given to mother after surgery and timing of newborn transportation to the nursery. Hung and Berg (2011) stated additional changes in practice may include untying the mother's

arms after delivery, and moving the location of the suction canister and anesthesia stand to accommodate close observation of the mother and newborn while in skin-to-skin contact.

AWHONN has been an advocate for skin-to skin in the OR as evidenced by the number of national conference presentations related to this topic offered over the past three years. In addition to the potential barriers that have been mentioned in the literature, the AWHONN presentations also mentioned the need to place the ECG leads up higher on the mother's chest and off to the side near the shoulders (Stone, Prater & Spencer, 2014). Alternative placement of the ECG leads, facilitates increased comfort for the newborn when placed on the mother's chest. Additionally, presentations at the 2014 and 2015 AWHONN national conferences also mentioned the need to place the newborn horizontal across the mother's chest, instead of vertically. This allows the obstetrician to continue the surgical repair of the maternal abdomen while the mother and newborn experience skin-to-skin contact.

Specific to OSUWMC, the implementation of skin-to-skin contact in the OR for term newborns and their mothers required a change in workflow for the RNs, anesthesiology and neonatology teams. Placement of the anesthesia work-stand needed to be moved and the anesthesiologist agreed to let the mother's arms free from the sideboards after the newborn had been delivered. Until recently, the workflow of the neonatology team was to take the baby to the Well Baby Nursery after the infant had been stabilized. More recently, the neonatology team agreed to leave the newborn in the operating room either under the radiant warmer, or to be held by the father or significant other, while the mother's surgical repair was completed. As a result, this student anticipated that this project would be cost neutral, as there is already an individual who is responsible for caring for the newborn while in the operating room.

The Baby Nurse, who is considered to be the second nurse in the operating room and the individual whose sole responsibility is to care for the newborn, is the individual who now oversees the care of the newborn once neonatology leaves the OR. Now that skin-to-skin contact has been implemented in the OR as the standard of care, mothers are now able to have their infant on their chest, skin-to-skin, after the initial vital sign and 1 and 5 minute Apgar scores have been completed. Either a member of the neonatology team or the baby nurse will bring the baby over to mom, and place the newborn in the correct position on her chest. From that point forward, it is the responsibility of the baby nurse to continue to monitor the newborn (coloring, vital signs, and safety) from a safe distance all while facilitating family bonding and allowing anesthesiology enough room to continue their work.

According to the Neonatal Resuscitation Program (NRP) guidelines, at every delivery there must be at least, one NRP trained individual whose sole responsibility is the newborn (Kattwinkel et al., 2010). Either a member of the neonatology team or the baby nurse must stay in the OR to care for the newborn until the mother and newborn move to the recovery room. From a financial perspective, the addition of skin-to-skin contact in the operating room required minimal financial resources (Hung & Berg, 2011). Since there is a second nurse in the OR already (the "baby nurse"), this student's evidence based quality improvement project was not projected to have a significant impact on workflow or finances. However, after project go-live, it became apparent that prior to implementing this project in the OR as the standard of care, the baby nurses were not consistently staying in the OR to monitor the newborn as required by NRP guidelines. It was common practice for the baby nurse to leave the OR to retrieve newborn Vitamin K and Erythromycin eye ointment from the unit Pyxis machine, and then return to the OR. After newborn medications were given, and another set of vital signs completed, the

newborn was often left in the OR to be monitored by the circulating nurse. Soon after implementing this DNP project, it became clear that the workflow issue of the baby nurse needed to be addressed. The unit nursing leaders became involved and a plan was created to address this issue. Medication administration was now going to be delayed until the mother and newborn were in the PACU. Unit nursing leaders also communicated to the RN staff the expectation that the baby nurse must remain in the OR for the entire time, with their sole responsibility to monitor and watch over the newborn.

It is anticipated that the proposed change in practice will have a positive effect on healthcare cost and quality of care for patients who deliver at OSUWMC. As mentioned previously, early skin-to-skin contact in the OR has a positive effect on breastfeeding success. The annual savings for the U.S. would be $13 billion, if 90% of newborns were exclusively breastfeed during the first six months of life (ODH, 2013). Adjusting hospital practices to allow this early skin-to-skin contact to occur, sets the stage for the mother and newborn to have the best chance of breastfeeding success. In addition to a reduction in healthcare cost and improved quality of care, skin-to-skin contact in the operating room has a positive effect on maternal satisfaction (Hung & Berg, 2011). This is an important consideration since patients are now asked to rate their hospital experience. The Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey is an instrument and data collection methodology that measures patients' perceptions of their hospital experience. This information is shared publically and is tied to healthcare reimbursement (Center for Medicare and Medicaid Services (CMS), 2014). Maternal satisfaction with skin-to-skin will likely be reflected in the organization's HCAPS score. Since discussion of this project began, OSUWMC has already begun to receive

positive comments from patients on the HCAP survey regarding their experience with skin-to-skin contact in the operating room.

Readiness for Change. Even though skin-to-skin contact seems like an easy intervention to implement in the healthcare setting, it takes time, collaboration and commitment by key stakeholders to move a project such as this forward. As with most quality improvement initiatives, there are barriers and hurdles that must be overcome. Internal and external data needs to be collected, a problem must be identified, and then the problem must be linked to the interventions and outcomes (Melnyk & Fineout-Overholt, 2011).

Open dialogue and communication among team members is important for initiating and helping to sustain the change. In the case of this project, nursing and physician leadership within the department have been very supportive, and the unit is adequately staffed with RNs and support staff. For this reason, the DNP student felt that the Labor and Delivery unit at OSUWMC was ready to take on this change in practice.

Project Design. Rosswurm & Larrabee's *Model for Evidence-Based Practice* incorporates evidence into the project, and the steps closely align with DMAIC methodology, which is the preferred method of process improvement at OSUWMC. Step 1 of Rosswurm and Larrabee's model was to assess the need for the change in practice. Observation of current practices within the OR, and review of internal and external data validated the need for practice change. Step 2 included planning the literature search and reviewing research concepts. Step 3 involved critical analysis and synthesis of the literature. A thorough literature search was completed, and the articles were evaluated and leveled (Table 1 and 2). The evidence was critiqued through the use of a structured critique worksheet, which facilitates evaluation of the strength of the evidence. Step 4 in the *Model of Evidence-Based Practice Change* involved

designing the practice change, identifying needed resources, designing a pilot and how it will be evaluated, as well as designing a plan for project implementation (Melnyk & Finout-Overholt, 2011). Once the stakeholder champions were identified, the team determined what the process variables were and what the sequence of care activities should be. The variables and care activities were listed, and placed into a draft protocol. It was important to keep the protocol as simple as possible, as this enhances the likelihood that the protocol will be accepted and utilized by the healthcare team (Rosswurm & Larrabee, 1999). Refer to Appendix 1 below for a detailed description of the protocol that was used to implement this project. Step 4 also included planning for the dry run. This step was important considering the size of the institution and the number of interdisciplinary team members involved in the care of the mother and newborn in the operating room (Melnyk & Finout-Overholt, 2011). The first key component of Step 5 was implementation of the dry run. After the dry run was completed, the team identified a "go-live" date for this practice change. Step 6 was the final step in this model. This step includes integrating the practice change into the healthcare environment and working to maintain the desired change over time. It is critically important for the early adopters to be involved in this step of the change process. This step continues to be the most difficult step of the process, since this evidence-based quality improvement project involves so many disciplines and not everyone has had the chance to participate in this initiative. Disseminating the results and celebrating the success is another important component of Step 6 (Melnyk & Finout-Overholt, 2011). As part of the dissemination process, this project will be presented at the 2016 AWHONN Ohio state nursing conference. An abstract will also be submitted to the 2017 national AWHONN conference for a podium presentation, and plans are underway to submit an article abstract in either an AWHONN or Nursing Quality journal.

Outcome Measures and Data Collection. There were two main outcome measures for this project. The first outcome measure is the total number of women scheduled for cesarean delivery and eligible for skin-to-skin care, as compared to the number who were provided the skin-to-skin intervention over a 4-week period. The second outcome measure is the percentage of C/S patients who participated in the skin-to-skin contact and were still breastfeeding at the time of discharge from the hospital.

A excel data collection spreadsheet was developed for data collection. The L&D Manager Report, which is a component of the electronic medical record, was reviewed on a weekly basis to identify patients who were eligible for skin-to-skin contact in the OR suite. The date of the scheduled C/S, patient initials, patient MRN, and the estimated gestational age (GA) were entered onto the excel data collection tool. After the date of the scheduled C/S, the electronic health record was accessed once again and the following information was entered onto the excel data collection tool:

- Confirmed GA
- Time of birth
- Newborn temperature in the OR
- Whether or not there was documentation of skin-to-skin contact in the OR
- Whether or not the newborn breastfed in the OR
- The time the mother and newborn were moved to the Post Anesthesia Care Unit (PACU)
- Newborn temperature in the PACU
- Whether or not there was documentation of skin-to-skin contact in the PACU
- Whether or not the newborn breastfed in the PACU
- The time the mother and newborn were transferred to the postpartum unit

- The method by which the newborn was being fed during the last 24 hours prior to hospital discharge:
    - Breast milk feedings only
    - Breast milk and formula feeding
    - Formula feeding only

- Names of the interdisciplinary team that participated in the delivery

Once all of the above information was entered into the data collection tool for a particular case, the patient initials and the MRN were deleted from the excel document.

Chapter Four

Implementation of Practice Change

Communication of Intent to Change Practice. Once the stakeholder champion team agreed to the protocol and an implementation date, the L&D nursing staff were educated on the upcoming change of practice during their unit staff meeting, as well as a posted ISBAR and FAQ document. Education of the obstetric, anesthesia and neonatology physicians occurred primarily through email communication and discussion at the OB Operations Council Meeting. This DNP student wrote up a concise email that explained the upcoming change in practice, why this change was important, how this change would affect their practice as a healthcare provider, and what the team needs from them as individual practitioners. This DNP student also made regular visits to Labor and Delivery to have one on one conversation with the staff and physicians, throughout the education and implementation process steps. There were no cost associated with the education, as the time spent on education was covered by this DNP student and her clinical immersion hour requirement. All education took place outside of this student's normal work hours and the time spent on this project was tracked.

Attempt was made to attend the OB residents meeting, to share this project with their team. Unfortunately, their meeting schedule was tight and they were unable to accommodate this presentation into their agenda prior to go-live. In addition to attending other various nursing and interdisciplinary meetings to share this information regarding the change in practice, two different written documents were created and distributed. The first written document was created in ISBAR format (**I**ntroduction, **S**ituation, **B**ackground, **A**ssessment, and **R**ecommendation), which is the preferred format for communication at OSUWMC (Table 4). The second document was a FAQ document that defined skin-to-skin, the benefits of skin-to-skin

contact, and from a safety perspective, what the team should be aware of when a mother and her newborn are in skin-to-skin contact (Table 5).

Dry Run and Debrief. Once education took place, the stakeholder team planned a dry run day to identify any potential barriers or unforeseen problems with implementation. The date of the dry run was picked with the goal to have as many of the project champions working that day as possible, as well as having a patient that met the criteria for this project. Following the dry run, no suggestions for change to the protocol were suggested by those team members involved.

"Go-live" Experience. Actual project implementation date was Tuesday, January 26, 2016 and skin-to-skin care of the newborn became the standard of care for all scheduled C/S with term newborns, whose mothers intend to breastfeed. Project champions as well the other healthcare team members were aware of the go-live date. Patients were identified as potential candidates based upon the established protocol. From verbal conversations with a variety of the project champions, along with retrospective chart reviews, the first 10 days of the project appeared to be going well. Approximately 10 days into the project, the staff and project champions were asking clarifying questions about role delineation, and the retrospective chart review documentation indicated that patients were not consistently being offered the opportunity for skin-to-skin contact. A meeting was scheduled which included nursing leaders, physician leaders, project champions and other concerned individuals. Concerns were addressed, and a mutually agreed upon plan was created by nursing and anesthesiology that addressed the issues raised.

Meeting resolution included the following:

- The nursing staff would no longer ask anesthesia to watch the newborn, even for a moment. Anesthesia physicians stated they are not comfortable assuming responsibility for the newborn while the baby nurse goes across the room to get another blanket or to obtain other needed items.
- The baby nurse will no longer be expected to administer Vitamin K and Erythromycin eye ointment to the newborn while in the OR. The administration of these medications will be postponed until the mother and the newborn are transferred to the PACU.
- The sole responsibility of the baby nurse in the OR is to watch over the newborn, ensure safety, monitor the vital signs, assist with skin-to-skin contact and breastfeeding, and facilitate bonding. The baby nurse is to remain close to the head of the bed while the newborn is in skin-to-skin contact.

At the end of the meeting, it appeared that all attendees were satisfied that they had an opportunity to share their concerns openly and professionally, and they seemed agreeable with the decisions made by the workgroup. Unit nursing leaders communicated this plan to the remainder of the nursing team and this DNP student followed up with individual unit champions, concerned physicians and nursing leaders.

Results of the Practice Change. As previously mentioned, beginning January 26th, skin-to-skin contact in the OR between a mother and her newborn, was the new standard of care for all term, scheduled C/S deliveries whose mothers intended to breastfeed. Compliance with the new protocol and assessment of the outcomes were evaluated via a retrospective chart review. The following data was collected for each of the operative deliveries between January 26, 2016 and February 25, 2016.

- Newborn temperature in the OR
- Whether or not skin-to-skin contact was initiated in the OR
- Whether or not the mother breastfed her infant in the OR
- Newborn temperature in the PACU
- Whether or not skin-to-skin contact was performed in the PACU
- Whether or not the mother breastfed her infant in the PACU
- What method of feeding the mother was using for the last 24 hours prior to hospital discharge (breastmilk only, breastmilk and formula, or formula only)

From January 26, 2016 through February 25, 2016, there were 31 C/S deliveries at OSUWMC that were term, scheduled C/S deliveries whose mothers intended to breastfeed. The retrospective chart review results are listed below.

- Temperature in the OR
    - 0 newborns had a temperature below 97.0 ax
    - 8 newborns had temperatures above 98.6 ax
- Skin-to-Skin Contact (Refer to Appendix 4).
    - 12 of the 31 patients had documentation of both skin-to-skin contact and breastfeeding in the OR: 39%
    - 5 of the 31 patients had documentation of skin-to-skin contact in the OR: 16%
    - 3 of the 31 patients breastfed only, while in the OR: 10%
    - 11 of the 31 patients did not experience skin to skin contact nor breastfeeding in the OR: 35%
        - 1 mother was unable due to maternal acuity
        - 1 mother refused

        - 9 patients did not have any contradictions documented for why skin to skin contact could not occur

- Temperature in the PACU
    - 0 newborns had a temperature below 97.0 ax
    - 10 newborns had temperatures above 98.6 ax
- Of the 19 patients who had skin to skin contact and/or breastfed their newborn in the OR , the following results indicate the method the mother was using to feed her infant at the time of discharge from the hospital (Refer to Appendix 5).
    - 14 of the 19 patients were breastfeeding only: 74%
    - 4 of the 19 patients were feeding breastmilk and formula: 21%
    - 1 of the 19 patients was feeding formula only: 5%

The literature clearly supports improved breastfeeding initiation and newborn thermoregulation when a newborn has the opportunity for skin-to-skin contact with his/her mother in the OR. Analysis of the data from this project also showed a strong correlation between skin-to-skin contact in the OR and the percent of mothers who are still breastfeeding their newborns at the time of discharge from the hospital, and no newborns had any issues with thermoregulation. Although limited in number, the four weeks of post-implementation data is in alignment with the literature. There were no issues with newborn thermoregulation, and patients that were able to participate in skin-to-skin contact in the OR had positive breastfeeding outcomes at the time of hospital discharge. After protocol implementation, 74% of the mothers were feeding only breast milk to their newborns (Appendix 5) as compared to 47% during calendar year 2015 (Appendix 3). Patient Satisfaction Scores were out of scope for this project, however a positive comment was returned on a Press Ganey survey, indicating extreme

satisfaction with the ability to participate in skin-to-skin contact with her newborn in the operating room.

Discussion. As clinical scholars and leaders within the healthcare arena, it is our job to challenge the status quo and encourage transformation of healthcare in order to optimize patient outcomes (Porter-O'Grady & Malloch, 2011). As a healthcare leader and DNP student, this student spent a lot of time communicating the need and importance for implementation of skin-to-skin contact as the standard of care. Emphasis was also placed on energizing the stakeholders so that the change becomes engrained into the daily workflow and culture of the organization. As with all new initiatives, there were some challenges along the way.

What went well? There were several steps along this process improvement journey that went well. First of all, this DNP student knew most of the RN and Physician/LIP staff prior to proposing this evidence based process improvement project. As a result, there was a positive rapport already established with these individuals. This was extremely helpful as this student was already aware of the culture on the nursing unit, the current working relationship between nurses and the other disciplines within L&D, and this student had a good idea of who would be a candidate to be one of the project champions.

What were the opportunities? This DNP project involved a change in workflow for four different healthcare professional groups. Those include L&D RNs, Anesthesia, Neonatology and the Obstetric team. OSUWMC is an academic teaching institution, which further increases the number of individuals who need to be aware of this change in practice. As a result, communicating this evidence based process improvement change to all individuals was a bit of a challenge. Additionally, communicating this information in a way that they would all come away with the same mental model, was very difficult. As the DNP leader, I was the vehicle for

the process change, however I relied on my project champions to help reinforce this information with their prospective teams. Some champions were more engaged than others, and some were willing to reinforce the information with their colleagues, while others took a much more passive approach. As mentioned previously in this document, Everett Roger's Diffusion of Innovation Model was the theoretical framework for this project. The project champions that were chosen were primarily from the early adopter group. Identification and engagement of the early adopters was important, however this student came to realize that this alone may not be enough to drive this initiative forward. Those project champions must also have the confidence to challenge their co-workers, and be able to work collaboratively with the other disciplines within the OR, to work out the minor differences before they escalate into a bigger issue. If teamwork and critical thinking are not present between the project champions and the rest of the healthcare team, the patient will not receive the appropriate intervention (skin-to-skin contact) nor the benefits.

As mentioned previously, at one point in the initiation of the practice change, evaluation of the audit tool began to reveal that not as many patients' were receiving skin-to-skin contact in the operating room as were eligible for the intervention. At this time, this student also started to get emails from several project champions and a concerned physician. These team members were asking for clarification about their role with the skin-to-skin initiative, and they were voicing concerns about the lack of collaboration by other champion groups. As a result, during the 3rd week of this project, this DNP student arranged a meeting to discuss the issues. All of the project champions were invited, as well as the nursing and physician leaders within the department, and the other individuals who had expressed concern. The reasons for project implementation were reviewed, along with the current concerns that had been expressed by the

various parties. As a group, the attendees came up with several solutions to those concerns along with an action plan on how and when these issues would be addressed.

Practice Model Use Analysis

As depicted in Figure 2, and discussed in the project design, there are six major categories in Rosswurm and Larrabee's (1999) *Model for Evidence-Based Practice Change*. In Step 1, the stakeholder champions meet with the practice change innovator to review the need for the change in practice. Internal data was shared and compared to what the literature supports to be best practice, and what the World Health Organization (WHO) and Healthy People 2020 have set as breastfeeding goals. During Step 2, the project champions would normally locate any additional evidence that the group felt was needed in order to answer the identified problem. In the case of this particular project, no additional evidence was needed. They felt that the topic was adequately researched. Step 3 would be the time when critical analysis of the additional research would be completed. In the case of this project, the project champions did not feel the need for, nor did they identify, any additional information for review. Step 4 involved a creating a detailed plan and developing a draft protocol for designing the practice change, identifying needed resources, designing a trial run and how it should be evaluated, as well as designing a plan for full project implementation (Melnyk & Fineout-Overholt, 2011). Step 5 consisted of conducting the trial run. The outcomes and feedback were used to make minor adjustments to the protocol and implementation plan. Any unforeseen issues can be addressed prior to integrating the practice change into the daily workflow (Porter-O'Grady & Malloch, 2011). Data was analyzed every week for the first four weeks of the project. Trends were shared with the stakeholder champions via one to one personal conversation and follow up meetings. The data was also shared through verbal conversation with the nursing and physicians in Labor and

Delivery, at unit staff meetings and at the April OB Operations Council Meeting. Step 6 involved integrating the practice change into the healthcare environment and plans to continue working to maintain the desired change over time. Beginning April of 2016, responsibility for data collection and continued quality improvement was delegated to the nursing leaders within L&D. This DNP student created an audit tool, which contained some components of the original audit tool used for this project. Beginning April 2016, the L&D nursing leaders are encouraged to complete 15 random audits per month (Table 6). These "real time" audits will help them to assess staff compliance and any potential barriers that may have evolved over time. Additionally, a request will be submitted to the information warehouse (IW), so that the L&D nursing leaders are able to obtain compliance information automatically each month. The team is still finalizing the exact components of this data request. The L&D nursing leaders have been encouraged to share both the real time audit results and the IW monthly results with their team at monthly staff meetings. This information will also be shared at the interdisciplinary OB Operations Council meeting on a monthly basis.

This project involved re-allocation of one staff member to be responsible for the care of the newborn while in the operating room at all times. Previously, this nurse assisted the circulator while overseeing care of the newborn, but now his/her sole responsibility is to tend to and care for the newborn. This is a requirement by the Association of Operating Room Nurses (AORN) and the AAP Neonatal Resuscitation Program (NRP).

Chapter Five

Project Limitations

There are several limitations of this project. The first one is the limited period in which the DNP student had to implement and evaluate the effectiveness of the project. Due to the sequence of events that are needed to meet the DNP program of study, and that of the organization where this project took place, this DNP student was only able to review 4 weeks' worth of data post implementation. During this time, not all staff and providers were exposed to this new protocol. It will take time for this practiced to become engrained into the workflow for all staff and physicians. Once that has occurred, the true impact of this protocol will be felt.

One of the other limitations of this project has to do with the narrow scope of the patient population. For the purposes of this project, only scheduled, term C/S deliveries whose mothers intended to breastfed, were included in this protocol. These types of deliveries occur most often Monday through Friday, between 7am and 3pm. As a result, only certain providers and nursing staff were exposed to this experience with the skin-to-skin intervention. The literature also supports the use of skin-to-skin contact for preterm deliveries as well (Bramson et al., 2010). Perhaps expanding this initiative to include preterm deliveries would be beneficial in the future as staffing allows.

The third limitation of this project is the fact that not all staff within the department had the opportunity to participate in, and get comfortable with, this evidence-based initiative. Until all staff, on all shifts, have the opportunity to routinely, participate in deliveries where skin-to-skin contact is implemented, it will be months before OSUWMC has reliable data regarding compliance with initiation in the OR, as well as the impact that the skin-to-skin contact has on feeding outcomes at the time of discharge.

Implications for Nurse Practice and the DNP Essentials

The American Association of Colleges of Nursing (AACN), identifies eight essentials of practice for the DNP. Those essentials include (AACN, 2006):

1. Scientific Underpinnings for Practice
2. Organizational and Systems Leadership for Quality Improvement and Systems Thinking
3. Clinical Scholarship and Analytical methods for Evidence Based Practice
4. Information Systems/Technology and Patient Care Technology for the Improvement and Transformation of Health Care
5. Health Care Policy for Advocacy in Health Care
6. Interprofessional Collaboration for Improving Patient and Population Health Outcomes
7. Clinical Prevention and Population Health for Improving the Nation's Health
8. Advanced Nursing Practice

As DNP leaders, it is important to approach our daily practice keeping all eight of the above-mentioned essentials in mind as we interact with our patient and colleagues. We need to be cognoscente of how our implementation strategies affect others within the organization, how they affect patient outcomes (short-term and long- term) and what opportunities there are to shape public policy so that legislation aligns with evidence based practice initiatives that affect nursing practice. As healthcare leaders, it is our professional responsibility to look at healthcare from a more comprehensive perspective, so that our decisions and nursing interventions are not created or maintained in a silo.

Initiating skin-to-skin contact in the OR as the standard of care for all term, scheduled C/S that intend to breastfeed, will have positive short term and long term impacts on the health of

the patient population served (DNP Essential VII). Nurses are in the unique position of being able to dramatically influence the success of evidence-based interventions such as skin-to-skin in the OR. It is the responsibility of DNP leaders to understand the short and long-term health impact that evidence based initiatives can have on our patient population (DNP Essential II). This impact must be communicated to the rest of the healthcare team so that the most informed decisions can be made, and so that they realize how impactful their interactions with the patient really are. As leaders, we must ensure that our organizational policies and procedures are in alignment with the body of evidence and advocate for state and federal legislation that support healthcare best practice. There is no one more qualified than advance practice nurses to influence governmental policies that affect nursing practice delivery of care, and health outcomes (Milstead, 2013).

Dissemination Plans

Dissemination of findings and lessons learned are key components of any DNP project. According to Moran, Burson and Conrad (2014), dissemination of the project, outcome and lessons learned is just as important, if not more important, than the actual project itself. The results of this project were shared internally at department staff meetings and operation council meetings. In addition to disseminating the result internally, another appropriate avenue would be to share the results at a local, state or national conference. This student will be speaking at the 2016 Ohio AWHONN nursing conference, which will take place in September 2016. This student also plans on submitting an abstract for a podium presentation at the 2017 national AWHONN conference. If the podium presentation for the national conference is not accepted, this student will create an abstract for a poster presentation at the same above-mentioned conference. This DNP student would also like to publish the journey of planning for,

and implementing, skin-to-skin contact at OSUWMC. This student plans to submit an abstract to either *Nursing for Women's Health* or *JOGNN* in 2017.

Summary

In summary, implementation of skin-to-skin contact in the OR as the standard of care for all scheduled, term Cesarean Section deliveries whose mothers intend to breastfeed, is a low cost, evidence-based intervention that has the potential to provide numerous short and long benefits to the mother and her newborn. Even though the intervention is low tech, the disruption in workflow for the L&D nurses, anesthesiologist, neonatologist and obstetricians can be extensive and difficult to adjust to. Dedication, teamwork and excellent communication amongst the interdisciplinary team is crucial for implementing this type of change and sustaining that change over time. A committed leadership team and regular follow up is also paramount for project success. DNP leaders are excellent candidates to lead implementation of evidence based practice improvement initiatives due to our skills in leadership, change theory, health promotion and project implementation.

References

Academy of Breastfeeding Medicine Board of Directors. (2008). Position on breastfeeding. *Breastfeeding Medicine, 3*(4), 267-270. doi:10.1089/bfm.2008.9988

American Academy of Pediatrics. (2012). Breastfeeding and the use of human milk. *Pediatrics, 129*(3), 827-841. doi:10.1542/peds2011-3552

American Academy of Pediatrics. (2012). Policy statement: breastfeeding and the use of human milk. *Pediatrics, 129*(3), 827-841. doi:10.1542/peds.2011-3552

American Association of Colleges of Nursing. (2006). The essentials of doctoral education for advanced nursing practice. Retrieved from http://www.aacn.nche.edu/publications/position/DNPEssentials.pdf

American College of Obstetricians and Gynecologist. (2007). Breastfeeding: maternal and infant aspects. *ACOG Clinical Review, 12*(1), 1S-16S.

Association of Women's Health, Obstetric and Neonatal Nurses. (2015). AWHONN position statement: breastfeeding. *JOGNN: Journal of Obstetric, Gynecologic & Neonatal Nursing, 44*(1), 145-150. doi:10.1111/1552-6909.12530

Bartick, M., Stuebe, A., Shealy, K., Walker, M., & Grummer-Strawn, L. (2009). Closing the quality gap: Promoting evidence-based breastfeeding care in the hospital. *Pediatrics, 124*(4), 793-802. doi:10.1542/peds.2009-0430

Bramson, L., Lee, J., Moore, E., Montgomery, S., Neish, C., Bahjri, K., & Melcher, C. (2010). Effect of early skin-to-skin contact during the first 3 hours following birth on exclusive breastfeeding during the maternity hospital stay. *Journal of Human Lactation, 26*(2), 130-137. doi:10.1177/0890334409355779

Carfoot, S., Williamson, P., & Dickson, R. (2005). A randomized controlled trial in the north of England examining the effects of skin-to-skin care on breast-feeding. *Midwifery, 21*(1), 71-79. doi:10.1016/j.midw.2004.09.002

Center for Medicare and Medicaid Services. (2014). HCAHPS: patient perspectives of care survey. Retrieved from http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HospitalQualityInits/HospitalHCAHPS.html

Doody, O., & Doody, C. (2012). Transformational leadership in nursing practice. *British Journal of Nursing, 21*(20), 1212-1218.

Fry, S. T., Veatch, R. M., & Taylor, C. (2011). *Case studies in nursing ethics* (Fourth ed.). Sudbury, MA: Jones & Bartlett Learning.

Gouchon, S., Gregori, D., Picotto, A., Nangeroni, M., & Giulio, P. (2010). Skin-to-skin contact after cesarean delivery: an experimental study. *Nursing Research, 59*(2), 78-84.

Haxton, D., Doering, J., Gingras, L., & Kelly, L. (2012). Implementing skin-to-skin contact at birth using the Iowa model. *Nursing for Women's Health, 16*(3), 221-230. doi:10.1111/j.1751-486X.2012.01733.x

Hung, K. J., & Berg, O. (2011). Early skin-to-skin after cesarean to improve breastfeeding. *American Journal of Maternal Child Nursing, 36*(5), 318-324. doi:10.1097/NMC.0b013e3182266314

Kattwinkel, J., Perlman, J. M., Aziz, K., Colby, C., Fairchild, K., Gallagher, J., . . . Zaichkin, J. (2010). Neonatal resuscitation: 2010 American heart association guidelines for cardiopulmonary resuscitation and emergency cardiovascular care. *Pediatrics, 126*(5), e1400-e1413. doi:10.1542/peds.2010-2972E

Marín Gabriel, MA, Llana Martín, I, López Escobar, A, Fernández Villalba, E, Romero Blanco, I, Touza Pol, P. (2010). Randomized controlled trial of early skin-to-skin contact: Effects on the mother and the newborn. *APA Acta Pædiatrica, 99*(11), 1630-1634.

Melnyk, B., & Fineout-Overholt, E. (2011). *Evidence-based practice in nursing & healthcare: A guide to best practice* (Second ed.). Philadelphia: Lippincott Williams & Wilkins.

Milstead, J. (2013). *Health policy and politics: A nurses Guide.* (4th ed.). Burlington, MA: Jones & Bartlett Learning.

Moore, E., & Anderson, G. (2007). Randomized controlled trial of very early mother-infant skin-to-skin contact and breastfeeding status. *Journal of Midwifery & Women's Health, 52*(2), 116-125. doi:10.1016/j.jmwh.2006.12.002

Moore, E., Anderson, G., Bergman, N., & Dowswell, T. (2012). Early skin-to-skin contact for mothers and their healthy newborn infants. *Cochrane Database of Systematic Reviews,* doi:10.1002/14651858.CD003519.pub3

Moran, E., Burson, R., & Conrad, D. (2014). *The doctor of nursing practice scholarly project: A framework for success*. Burlington, MA: Jones & Bartlett Learning.

Moran-Peters, J., Zauderer, C., Goldman, S., Baierlein, J., & Smith, A. (2014). A quality improvement project focused on women's perceptions of skin-to-skin contact after cesarean birth. *Nursing for Women's Health, 18*(4), 294-303. doi:10.1111/1751-486X.12135

Morrison, B., & Ludington-Hoe, S. (2012). Interruptions to breastfeeding dyads in a DRP unit. *MCN. The American Journal of Maternal Child Nursing, 37*(1), 36-41. doi:10.1097/NMC.0b013e31823851d5

Nolan, A., & Lawrence, C. (2009). A pilot study of a nursing intervention protocol to minimize maternal-infant separation after cesarean birth. *JOGNN: Journal of Obstetric, Gynecologic & Neonatal Nursing, 38*(4), 430-442. doi:10.1111/j.1552-6909.2009.01039.x

Northouse, P. (2013). Transformational leadership. *Leadership: theory and practice* (pp. 185-216)

Ohio Department of Health. (2013). *Women and infants health 2013* Ohio Department of Health.

Phillips, R. (2013). The sacred hour: uninterrupted skin-to-skin contact immediately after birth. *Newborn & Infant Nursing Reviews, 13*, 67-67.

Phillips + Fenwick: The Women's Healthcare Company. (2010). The business case for family centered maternity care. Retrieved from http://pandf.com/index.htm

Porter-O'Grady, T., & Malloch, K. (2011). *Quantum leadership: advancing innovation, transforming health care* (Third ed.). Sudbury, MA: Jones & Bartlett Learning.

Ransom, E., Joshi, M., Nash, D., & Ransom, S. (2008). *The healthcare quality book* (Second ed.). Chicago, Illinois: Health Administration Press.

Redshaw, M., Hennegan, J., & Kruske, S. (2014). Holding the baby: early mother-infant contact after childbirth and outcomes. *Midwifery, 30*, e177-e187.

Rosswurm, M., & Larrabee, J. (1999). A model for change to evidence-based practice. *Journal of Nursing Scholarship, 31*(4), 317-322. doi:10.1111/j.1547-5069.1999.tb00510.x

Stevens, J., Schmied, V., Burns, E., & Dahlen, H. (2014). Immediate or early skin-to-skin contact after a cesarean section: A review of the literature. *Maternal and Child Nutrition, 10*, 456-473. doi:10.1111/mcn.12128

Stone, S., Prater, L., & Spender, R. (2014). Facilitating Skin-to-Skin Contact in the Operating Room after Cesarean Birth. *Nursing for Women's Health, 18*(6), 486-499.

Takahashi, Y., Tamakoshi, K., Matsushima, M., & Kawabe, T. (2011). Comparison of salivary cortisol, heart rate, and oxygen saturation between early skin-to-skin contact with different initiation and duration times in healthy, full-term infants. *Early Human Development, 87*, 151-157. doi:10.1016/j.earlhumdev.2010.11.012

The Cleveland Clinic Foundation. (2011). Cesarean birth (C-section). Retrieved from https://my.clevelandclinic.org/health/treatments_and_procedures/hic-Cesarean-Birth-C-Section

The Ohio State University Wexner Medical Center. (2011). Mission, vision, values. Retrieved from https://onesource.osumc.edu/sites/about/Pages/Mission.aspx

U.S. Department of Health and Human Services. (September 2010). Your baby's first hours of life. Retrieved from http://www.womenshealth.gov/pregnancy/childbirth-beyond/baby-first-hours.html

Zaccagnini, M., & White, K. (2014). *The doctor of nursing practice* (Second ed.). Burlington, MA: Jones & Bartlett Learning.

Zwedberg, S., Blomquist, J., & Sigerstad, E. (2015). Midwives' experiences with mother-infant skin-to-skin contact after a caesarean section: "fighting an uphill battle". *Midwifery, 31*, 215-220.

Appendix

Appendix 1

PROTOCOL: SKIN-TO-SKIN CONTACT IN THE OPERATING ROOM

PATIENT POPULATION: ADULT WOMEN, SCHEDULED, TERM CESAREAN BIRTHS WITH THE INTENT TO BREASTFEED

THE OHIO STATE UNIVERSITY
WEXNER MEDICAL CENTER

- The L&D RN will identify all women (18 years of age, or older) scheduled for a term C/S delivery who intend to breastfeed. For the purposes of this protocol, "term" indicates gestational age of 37-42 completed weeks.
- The mother is brought to the operating room (OR) and placed on the operating table in the usual manner.
- During procedure sign in, the circulating RN will communicate to the OR team that the patient is having a scheduled, term delivery and she has the intent to breastfeed. Early skin-to-skin contact will be anticipated.
- Anesthesia personnel will place ECG patches laterally away from the mother's chest. The mother's gown will be left untied, and mother's arms will be unrestrained. IV poles will be positioned below the arm boards whenever possible to allow more room for access to the chest area under the drape.
- Once the mother is covered in sterile drapes, the circulating RN will notify the neonatology team of the pending delivery per the established OB STAT call system. Upon arrival, the neonatology team will prepare the radiant warmer and test the emergency equipment in the usual fashion.
- After delivery, the newborn will be taken to the radiant warmer by the neonatology team to be dried, stimulated, and receive a set of vital signs and Apgar scores, as is currently the routine.
- Once the newborn is medically stable, as determined by the neonatology team performing the newborn assessment, and the initial Apgar score is 7 or greater, a hat and diaper will be placed on the newborn. The neonatology team will transfer the newborn to the mother. The newborn will be placed horizontally skin-to-skin onto the mother's chest. The newborn and mother will be covered with warm blankets.
- Once the neonatology team has reported off to the 2nd L&D RN (baby nurse), the neonatology team will exit the operating room. Subsequent vital signs will be completed by the baby nurse while the mother and newborn are in skin-to-skin contact.
- The baby nurse will remain at the head of the table, continuing to assess the newborn, taking vital signs per newborn protocol and assuring that the mother continues to desire skin-to-skin contact. The baby nurse will facilitate breastfeeding if the newborn shows signs of initiating breastfeeding.
- If the newborn becomes unstable or shows signs of distress, the baby nurse will take the newborn to the radiant warmer and attend to the newborn. The circulating RN will call for the neonatology team to return to the operating room if needed. The neonatology team will remain with the newborn and facilitate transfer of the newborn to the appropriate nursery.
- If the condition of the mother deteriorates, anesthesia will request the baby nurse remove the newborn immediately from the mother's chest. The newborn will be placed under the radiant warmer still under close observation of the baby nurse or appropriate designee.
- At no time will Anesthesia or the circulating RN be responsible for the care and/or monitoring of the newborn. This is the responsibility of the baby nurse or qualified designee.

Appendix 1 (continued)

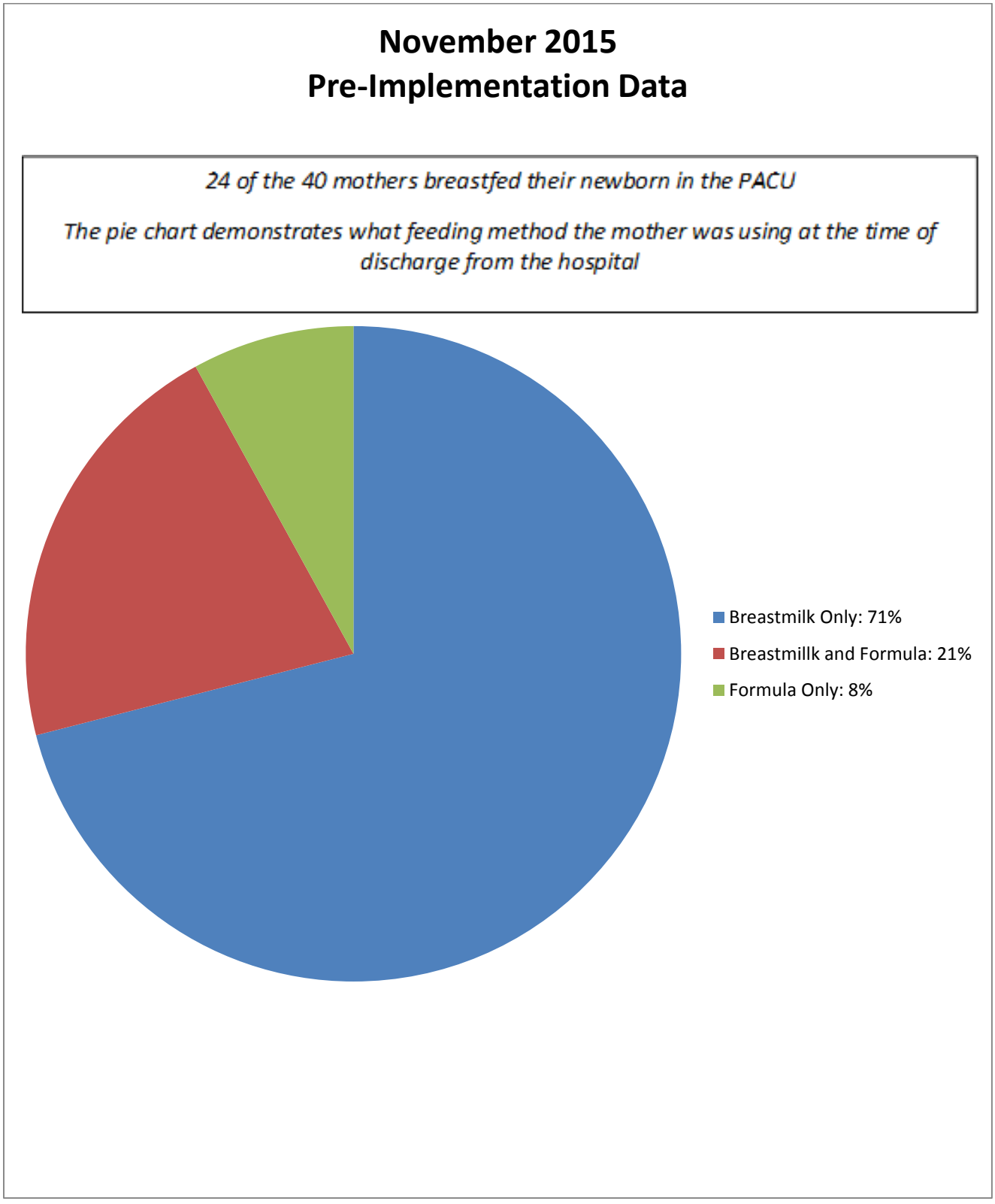
- Should staffing or high patient census be such that a baby nurse cannot remain in the OR for the duration of the procedure and until the mother and newborn are move to the PACU, the newborn will be taken to the nursery and will be reunited with the mother at a later time or upon her transfer to the postpartum unit.

- After surgical repair of the mother is complete, the newborn will be wrapped in warm blankets by the baby nurse, and the newborn will be held by either the father, family member or the baby nurse, while the mother is transferred from the operating table to the stretcher.

- Once the mother is stabilized and secure on the stretcher, the newborn may be given back to the mother who is encourage to hold the newborn during the administration of Vitamin K. The newborn is then placed on the mother's bare chest in skin-to-skin fashion. Together the mother and newborn will be moved to the Post Anesthesia Care Unit (PACU) along with the circulating RN.

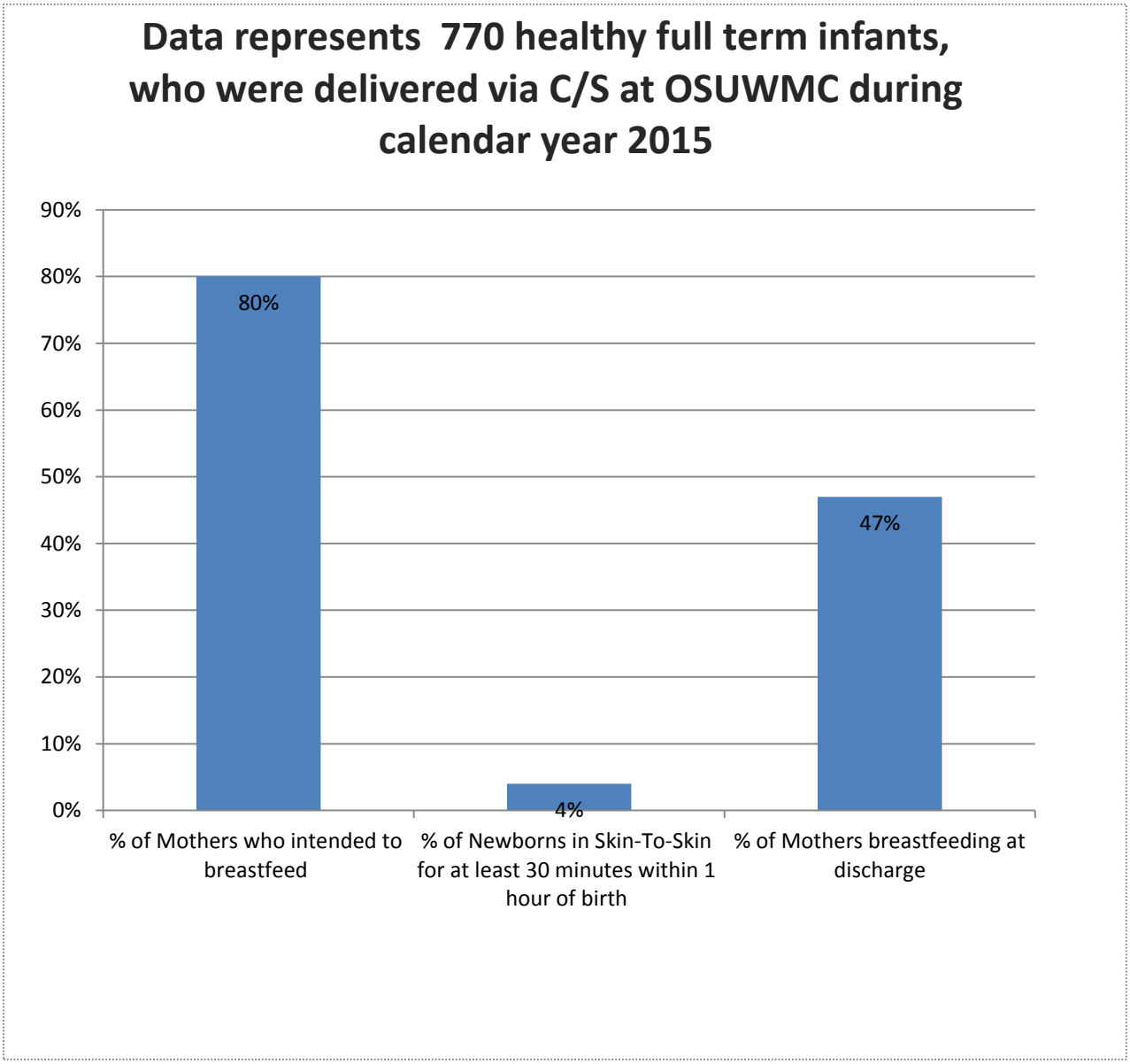
- While in the PACU, newborn vital signs, assessments and routine care/treatments may be performed on the mother's chest. Should skin-to-skin contact be discontinued in the PACU, the newborn will be placed under the radiant warmer if available. If a radiant warmer is not available, newborn will be double wrapped and held by a family member.

Appendix 2

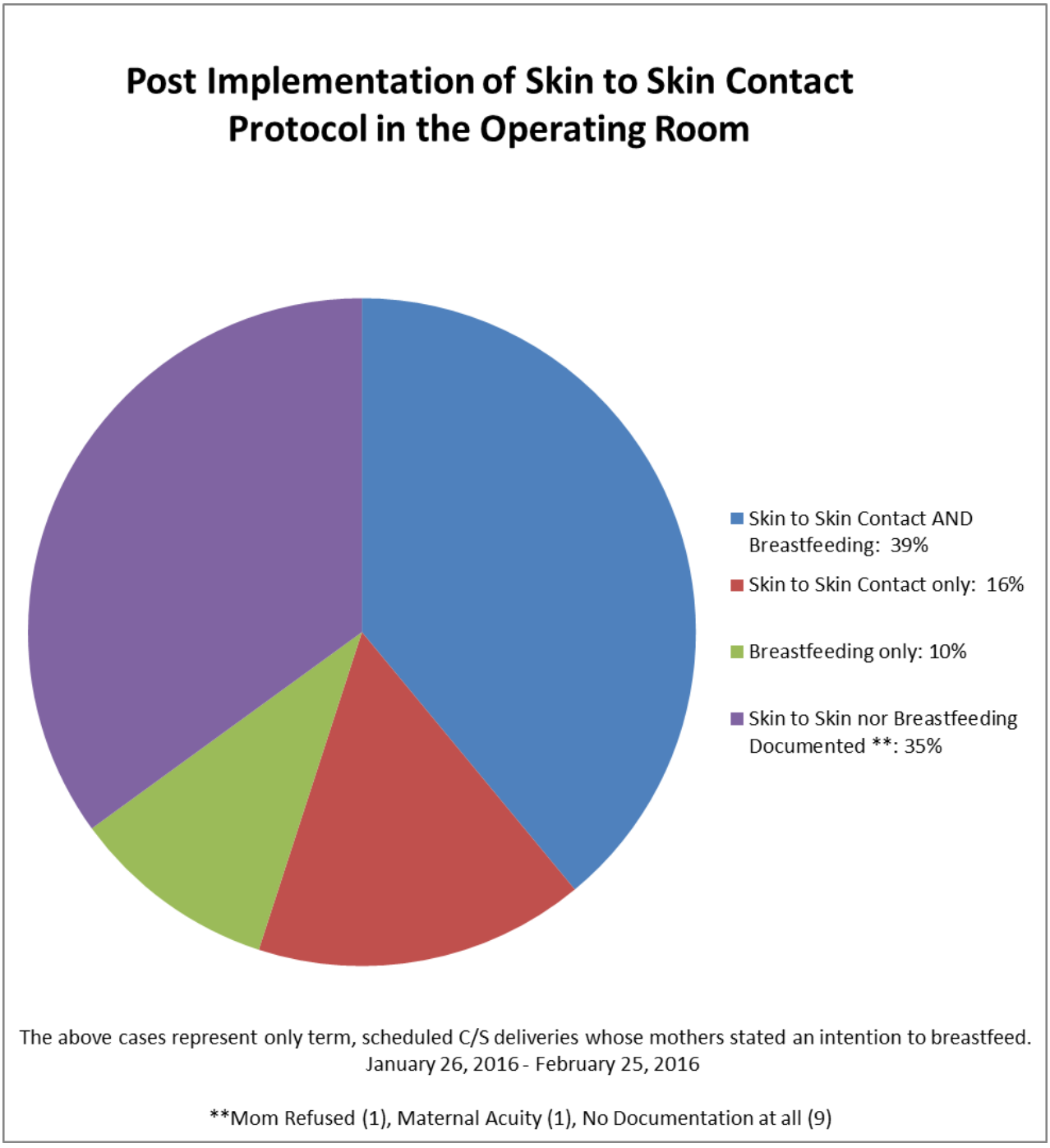

November 2015
Pre-Implementation Data
24 of the 40 mothers breastfed their newborn in the PACU
The pie chart demonstrates what feeding method the mother was using at the time of discharge from the hospital
Breastmilk Only: 71%
Breastmillk and Formula: 21%
Formula Only: 8%

Appendix 3

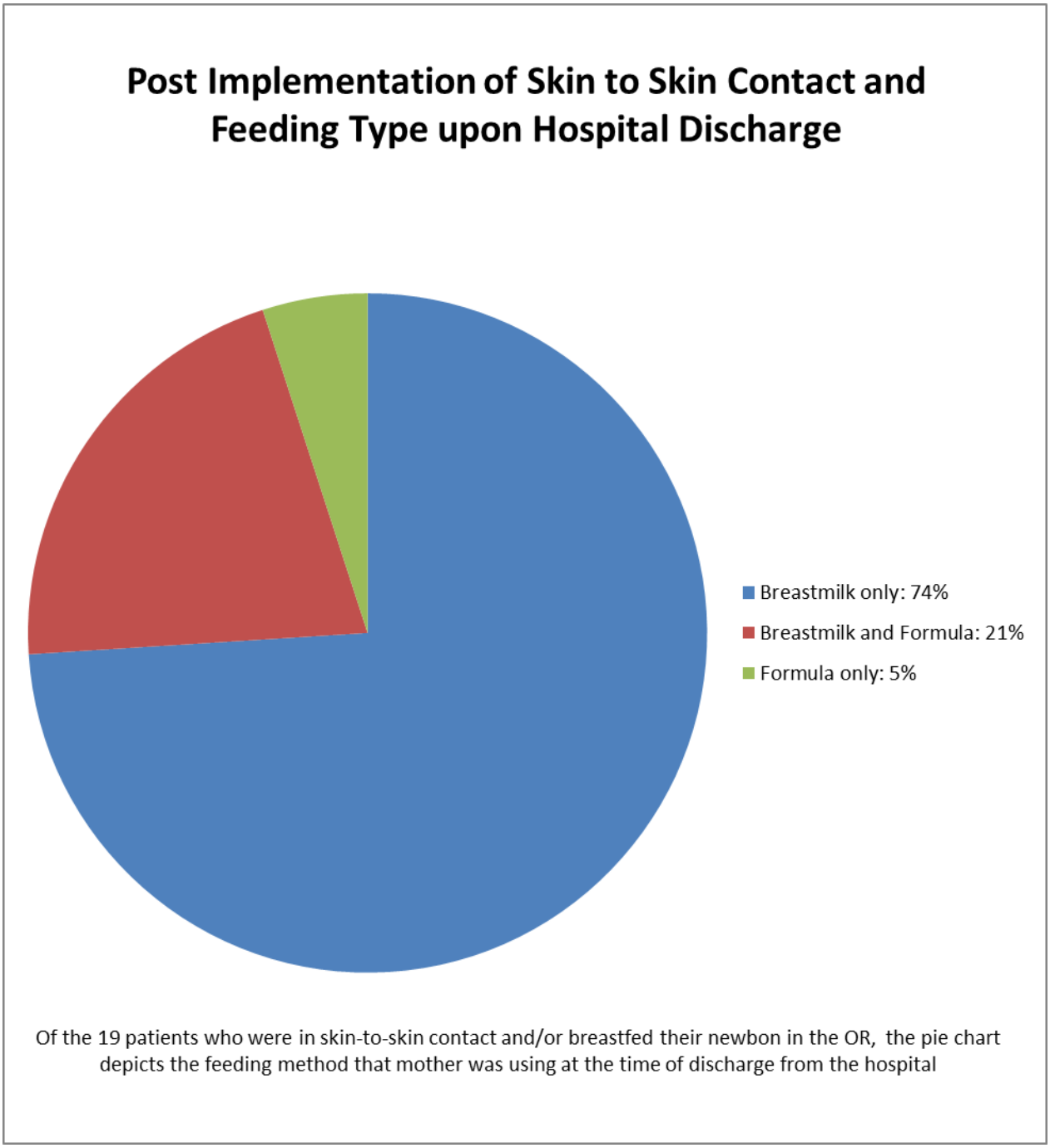
Calendar year 2015



Appendix 4


Post Implementation of Skin to Skin Contact Protocol in the Operating Room
Skin to Skin Contact AND Breastfeeding: 39%
Skin to Skin Contact only: 16%
Breastfeeding only: 10%
Skin to Skin nor Breastfeeding Documented **: 35%
The above cases represent only term, scheduled C/S deliveries whose mothers stated an intention to breastfeed.
January 26, 2016 - February 25, 2016
**Mom Refused (1), Maternal Acuity (1), No Documentation at all (9)

Appendix 5


Post Implementation of Skin to Skin Contact and Feeding Type upon Hospital Discharge
Breastmilk only: 74%
Breastmilk and Formula: 21%
Formula only: 5%
Of the 19 patients who were in skin-to-skin contact and/or breastfed their newbon in the OR, the pie chart depicts the feeding method that mother was using at the time of discharge from the hospital

Tables

Table 1

Levels of Evidence

X (copy symbol as needed)	1	2	3	4	5	6	7	8	9	10	11	12
Level I: Systematic review or meta-analysis		x										
Level II: Randomized controlled trial	x		x			x	x					x
Level III: Controlled trial without randomization												
Level IV: Case-control or cohort study					x							
Level V: Systematic review of qualitative or descriptive studies												
Level VI: Qualitative or descriptive study (includes evidence implementation projects)				x				x			x	
Level VII: Expert opinion or consensus									x	x		

LEGEND

#1: Skin to skin after cesarean delivery: An Experimental Study. Gouchon et al.

#2: Early Skin-to-Skin Contact for Mothers and Their Healthy Newborn Infants. Moore et al. 2014 (Cochrane Review)

#3: Randomized controlled trial of early skin-to-skin contact: effects on the mother and the newborn. Marin et al.

#4: Comparison of salivary cortisol, heart rate, and oxygen saturation between early skin-to-skin contact with different initiation and duration times in healthy full-term infants. Takahashi et al. 2011

#5: Effect of Early Skin-to-Skin Mother-Infant Contact During the First 3 Hours Following Birth on Exclusive Breastfeeding During the Maternity Hospital Stay. Bramson et al.

#6: A Randomized Controlled Trial in the North of England Examining the effects of skin0to0skin care on breastfeeding. Carfoot et al. 2005.

#7: A Pilot Study of a Nursing Intervention Protocol to Minimize Maternal-Infant Separation after Cesarean Birth. Nolan & Lawrence, 2009.

#8: Use of a Video-Ethnographic Intervention (PRECESS Immersion Method) to Improve Skin-to-Skin Care and Breastfeeding Rates. Crenshaw et al., 2012.

#9: Facilitating Skin-to-Skin Contact in the Operating Room after Cesarean Birth. Stone, Prater & Spencer. 2015.

#10: The Sacred Hour: Uninterrupted Skin-to-Skin Contact Immediately After Birth. Phillips. 2013

#11: Holding the baby: Early mother-infant contact after childbirth and outcomes. Redshaw et al. 2014.

#12: Randomized Controlled Trial of Very Early Mother-Infant Skin-to-Skin Contact and Breastfeeding Status. Moore & Anderson, 2007.

Source: © 2012, Adapted with permission from Evidence-based practice in nursing and healthcare. (p. 521), by Melnyk, Bernadette Mazurek, and Ellen Fineout-Overholt, Lippincott Williams & Wilkins, 2011.

Table 2

Evaluation Table

Citation	Conceptual Framework	Design/ Method	Sample/Setting	Major Variables Studied and Their Definitions	Outcome Measurement	Data Analysis	Findings	Level of Evidence	Quality of Evidence: Critical Worth to Practice
Keeper Article 1: Skin to skin contact after cesarean delivery. Gouchon et al									
Author Year Title County Funding	**Theoretical basis for study**		**Number Characteristics Exclusion criteria Attrition**	**Independent variables IV1 = IV2 = Dependent variables**	**What scales used - reliability info (alphas)**	**What stats used**	**Statistical findings or qualitative findings**	**Level =**	**Strengths Limitations Risk or harm if implemented Feasibility of use in your practice**
Gouchon, S., Gregori, D., Picotto, A., Nangeroni, M., & Giulio, P. (2010). Skin-to-skin contact after cesarean delivery: an experimental study. Nursing Research, 59(2), 78-84.	N/A	Experimental , Randomized	68 pairs of mother/baby dyads. Italy. Elective Cesarean births only w/ term newborns	IV1=skin temp IV2= BR feeding IV3= Exc. BR feeding at D/C DV= SSC	Skin temp: temporal thermoscan BR feeding: IBAT tool	T test	No difference in temp b/t SSC and control groups	2	SSC started roughly 60 minutes after delivery. Mothers report satisfy. And excl. BR higher in SSC group.

Source: © 2012, Adapted with permission from Evidence-based practice in nursing and healthcare. (p. 320), by Melnyk, Bernadette Mazurek, and Ellen Fineout-Overholt, Lippincott Williams & Wilkins, 2011.

Citation	Conceptual Framework	Design/ Method	Sample/Setting	Major Variables Studied and Their Definitions	Outcome Measurement	Data Analysis	Findings	Level of Evidence	Quality of Evidence: Critical Worth to Practice
Keeper Article 2: Early Skin-to-Skin Contact for Mothers and Their Healthy Newborn Infants. Moore et al. 2012									
Author Year Title County Funding	**Theoretical basis for study**		**Number Characteristics Exclusion criteria Attrition**	**Independent variables IV1 = IV2 = Dependent variables**	**What scales used - reliability info (alphas)**	**What stats used**	**Statistical findings or qualitative findings**	**Level =**	**Strengths Limitations Risk or harm if implemented Feasibility of use in your practice**
Moore, E., Anderson, G., Bergman, N., & Dowswell, T. (2012). Early skin-to-skin contact for mothers and their healthy newborn infants. Cochrane Database of Systematic Reviews, doi:10.1002/1465 1858.CD003519.p ub3	N/A	Cochrane Database of randomized controlled trials. Aim: assess the effects of early SSC on breastfeedin g, physiological adaptation and behavior in healthy mother-infant dyads	34 RCTs included 2177 mother-infant dyad groups				Statistically + effect of early SSC on breastfeeding at one to four months postbirth. SSC increased breastfeeding duration but the results were not quite statistically significant= P=.06. Blood glucose 75-90 minutes after birth was significantly	1	Quality of studies was mixed

Source: © 2012, Adapted with permission from Evidence-based practice in nursing and healthcare. (p. 520), by Melnyk, Bernadette Mazurek, and Ellen Fineout-Overholt, Lippincott Williams & Wilkins, 2011.

Citation	Conceptual Framework	Design/ Method	Sample/Setting	Major Variables Studied and Their Definitions	Outcome Measurement	Data Analysis	Findings	Level of Evidence	Quality of Evidence: Critical Worth to Practice
							higher in SSC infants. Interventions benefit breastfeeding outcomes, cardio-respiratory stability and decreased infant crying.		

Citation	Conceptual Framework	Design/ Method	Sample/Setting	Major Variables Studied and Their Definitions	Outcome Measurement	Data Analysis	Findings	Level of Evidence	Quality of Evidence: Critical Worth to Practice
Keeper Article 3: Randomized controlled trial of early skin-to-skin contact: effects on the mother and the newborn									
Author Year Title County Funding	**Theoretical basis for study**		**Number Characteristics Exclusion criteria Attrition**	**Independent variables IV1 = IV2 = Dependent variables**	**What scales used - reliability info (alphas)**	**What stats used**	**Statistical findings or qualitative findings**	**Level =**	**Strengths Limitations Risk or harm if implemented Feasibility of use in your practice**
Marin et al. (2010). Acta Paediatrica. Volume 99(11). P.1630-1634	N/A	Randomized Controlled Trial Peds. were randomized by their name to either SSC or control group. Mothers were blinded to their peds. Control groups taken to warmer p birth. Given to parents p 10 minutes wrapped in blanket.	350 healthy mothers w/ single newborn. Term or near term over 4 months. Madrid-Torrelodones Hospital.	IV= SSC for 2 continuous hours after birth **DV #1:** Thermal regulation **DV#2:** SSC influence on recovery from hypothermia. **DV #3:** Rates of BRF upon discharge and 1 month **DV#4:** SSC on frequency of NICU adm. **DV #5:** SSC on maternal pain **DV#6:** SSC on mat. mood	Axillary temp of newborn Visual analogue scale to measure mom's pain F/U during hosp. stay and 1 month after D/C to inquire about exc. breastfeeding	Unpaired t-test, Fisher test or Chi-Square test as approp.	**DV #1:** Greater thermal stability in SSC group **DV #3:** SSC group more excl. breastfeeding at D/C	Level 2	Strong evidence. Study from foreign country

Source: © 2012, Adapted with permission from Evidence-based practice in nursing and healthcare. (p. 320), by Melnyk, Bernadette Mazurek, and Ellen Fineout-Overholt, Lippincott Williams & Wilkins, 2011.

Citation	Conceptual Framework	Design/ Method	Sample/Setting	Major Variables Studied and Their Definitions	Outcome Measurement	Data Analysis	Findings	Level of Evidence	Quality of Evidence: Critical Worth to Practice
Keeper Article 4: Comparison of salivary cortisol, heart rate, and oxygen saturation between early skin-to-skin contact with different initiation and duration times in healthy, full-term infants. Takahaski et al.									
Author Year Title County Funding	**Theoretical basis for study**		**Number Characteristics Exclusion criteria Attrition**	**Independent variables IV1 = IV2 = Dependent variables**	**What scales used - reliability info (alphas)**	**What stats used**	**Statistical findings or qualitative findings**	**Level =**	**Strengths Limitations Risk or harm if implemented Feasibility of use in your practice**
Takahashi, Y., Tamakoshi, K., Matsushima, M., & Kawabe, T. (2011). Comparison of salivary cortisol, heart rate, and oxygen saturation between early skin-to-skin contact with different initiation and duration times in healthy, full-term infants. *Early Human Development, 87*, 151-157.	-	Non-Experimental Aim: To investigate physiologically and biochemically now early SSC with different initiation and duration time influence the stress post birth for full-term infants.	147 consecutive, newborn infants who were born spontaneously at 2 maternity hospitals in Japan (Jan-Oct 2009) Infants: Healthy and full term. Excluded if Apgar 7 or less Mothers: SVD, Singleton full term infant, uncomplicated pregnancy and	**Study 1:** IV=SSC within 5 min of less of birth DV= NB heart rate DV= NB oxygen saturation **Study 2:** IV1= SSC for 60 min. or less IV2= SSC for >60 min. DV=Salivary cortisol	Heart rate SpO2 used to evaluate circulatory and respiratory adaptation. Salivary cortisol used to evaluate the psychological stress.	Kaplan-Meier analysis	**Study 1:** "Birth skin to skin" resulted in earlier HR stabilization in the NB as compared to "early skin to skin" **Study 2:** SSC that continued for more than 60 min significantly decreased salivary cortisol levels.	6 ?	This study was done in vaginal deliveries only.

Source: © 2012, Adapted with permission from Evidence-based practice in nursing and healthcare. (p. 520), by Melnyk, Bernadette Mazurek, and Ellen Fineout-Overholt, Lippincott Williams & Wilkins, 2011.

Citation	Conceptual Framework	Design/ Method	Sample/Setting	Major Variables Studied and Their Definitions	Outcome Measurement	Data Analysis	Findings	Level of Evidence	Quality of Evidence: Critical Worth to Practice
doi:10.1016/j.earlhumdev.2010.11.012			delivery						

Citation	Conceptual Framework	Design/ Method	Sample/Setting	Major Variables Studied and Their Definitions	Outcome Measurement	Data Analysis	Findings	Level of Evidence	Quality of Evidence: Critical Worth to Practice
Keeper Article 5: Effect of Early Skin-to-Skin Mother-Infant Contact During the First 3 Hours Following Birth on Exclusive Breastfeeding During the Maternity Hospital Stay. Bramson et al. 2010									
Author Year Title County Funding	**Theoretical basis for study**		**Number Characteristics Exclusion criteria Attrition**	**Independent variables IV1 = IV2 = Dependent variables**	**What scales used - reliability info (alphas)**	**What stats used**	**Statistical findings or qualitative findings**	**Level =**	**Strengths Limitations Risk or harm if implemented Feasibility of use in your practice**
Bramson, L.; Lee, J.; Moore, E.; Montgomery, S.; Neish, C.;Bahjri, K.; Melcher, C (2010). Journal of Human Lactation 26(2). P. 130-137		Prospective cohort study Nurse driven, hospital-based.	21,842 mother-infant dyads from a 19 hospital system in CA. Each hospital had to agree to implement 2 of the 3 (24 hour rooming in, staff breastfeeding management classes and early skin to skin contact), English and Spanish w/ healthy infant 37-40 wks gest.	IV1: maternal-infant feeding method intention IV2: sociodemographic characteristics & mode of delivery. IV3: Duration spend in early SSC during the first 3 hours after delivery DV1: actual type and method of feeding the infant received during the hospital stay	SPSS (Statistical Package for Social Sciences)	Univariate logistic regression. P Value	Early skin to skin contact was strongly associated w/ exclusive breastfeeding in a dose-response manner. The longer a mother/ infant in SSC during the first 3 hours after birth, the more likely that she will breastfeed exclusively during hospital	4	Great article to support my PICOT question. Strength was large volume of patients in study (21,842). Limitation was that it was not randomized

Source: © 2012, Adapted with permission from Evidence-based practice in nursing and healthcare. (p. 520), by Melnyk, Bernadette Mazurek, and Ellen Fineout-Overholt, Lippincott Williams & Wilkins, 2011.

Citation	Conceptual Framework	Design/ Method	Sample/Setting	Major Variables Studied and Their Definitions	Outcome Measurement	Data Analysis	Findings	Level of Evidence	Quality of Evidence: Critical Worth to Practice
Keeper Article 6: A Randomised Controlled Trial in the North of England Examining the Effects of Skin-to-Skin Care on Breastfeeding. Carfoot , 2005									
Author Year Title County Funding	**Theoretical basis for study**		**Number Characteristics Exclusion criteria Attrition**	**Independent variables IV1 = IV2 = Dependent variables**	**What scales used - reliability info (alphas)**	**What stats used**	**Statistical findings or qualitative findings**	**Level =**	**Strengths Limitations Risk or harm if implemented Feasibility of use in your practice**
Carfoot, S.; Williamson, P.; & Dickson, R. (2005). Midwifery. 21. P. 71-79	N/A	Randomized Controlled Trial	244 women agreed to participate. 40 of those were not randomized for a variety of reasons. 204 were randomized	IV1= success of first breastfeed IV2= breastfeeding at 4 months IV3= temp. 1 hour after birth IV4= maternal satisfaction DV1=Skin to skin contact DV2= Routine Care	Infant Breast Feeding Assessment Tool (IBFAT) was used to assess success of breast feed	T-test	More mothers who have successful first Br feed after skin to skin contact. Higher degree of satisfaction. Baby temp is not adversely affected by SSC. SSC did not affect Br. Feeding at 4 months	2	Limitations was that it was an older study

Source: © 2012, Adapted with permission from Evidence-based practice in nursing and healthcare. (p. 320), by Melnyk, Bernadette Mazurek, and Ellen Fineout-Overholt, Lippincott Williams & Wilkins, 2011.

Citation	Conceptual Framework	Design/ Method	Sample/Setting	Major Variables Studied and Their Definitions	Outcome Measurement	Data Analysis	Findings	Level of Evidence	Quality of Evidence: Critical Worth to Practice
Keeper Article 7: A Pilot Study of a Nursing Intervention Protocol to Minimize Maternal-Infant Separation After Cesarean Birth									
Author Year Title County Funding	**Theoretical basis for study**		**Number Characteristics Exclusion criteria Attrition**	**Independent variables IV1 = IV2 = Dependent variables**	**What scales used - reliability info (alphas)**	**What stats used**	**Statistical findings or qualitative findings**	**Level =**	**Strengths Limitations Risk or harm if implemented Feasibility of use in your practice**
Nolan, A., & Lawrence, C. (2009). A pilot study of a nursing intervention protocol to minimize maternal-infant separation after cesarean birth. *JOGNN: Journal of Obstetric, Gynecologic & Neonatal Nursing, 38*(4), 430-442. doi:10.1111/j.1552-6909.2009.01039.x	Mother-Newborn Mutual Caregiving framework by Anderson	Randomized Controlled Trial implementing a NIMS protocol Aim of study was to pilot test a NIMS protocol which aimed to minimize MI separation after a C/S	250 bed acute care community hospital w/ LDRP w/ 1,500 births per year. 50 MB dyads. Repeat, elective C/S deliveries were the population of focus. Live, singleton fetus >= 37 weeks gestation.	IV1= Initiation of NIMS DV=Newborn resp rate, temp, salivary cortisol measurement and maternal pain scores	NIMS scale	Chi-Square and T-test	NB temp at 1 h was sig. higher in NIMS group. NB resp rate from birth to end of PACU were sig. lower in NIMS group. NB salivary cortisol was higher in the NIMS group. Time to first BF was quicker in NIMS group.	2	Study was under-powered. Missing data also caused concerns (i.e 30% of salivary cortisol samples didn't have enough for analysis

Source: © 2012, Adapted with permission from Evidence-based practice in nursing and healthcare. (p. 320), by Melnyk, Bernadette Mazurek, and Ellen Fineout-Overholt. Lippincott Williams & Wilkins, 2011.

Citation	Conceptual Framework	Design/ Method	Sample/Setting	Major Variables Studied and Their Definitions	Outcome Measurement	Data Analysis	Findings	Level of Evidence	Quality of Evidence: Critical Worth to Practice
Keeper Article 8: Use of a Video-Ethnographic Intervention (PRECESS Immersion Method) to Improve Skin-to-Skin Care and Breastfeeding Rates									
Author Year Title County Funding	**Theoretical basis for study**		**Number Characteristics Exclusion criteria Attrition**	**Independent variables IV1 = IV2 = Dependent variables**	**What scales used - reliability info (alphas)**	**What stats used**	**Statistical findings or qualitative findings**	**Level =**	**Strengths Limitations Risk or harm if implemented Feasibility of use in your practice**
Crenshaw, J., et al. (2012). Use of a video-ethnographic intervention (PRECESS immersion method) to improve skin-to-skin care and breastfeeding rates. *Breastfeeding Medicine, 7*(2), 69-78. doi:10.1089/bfm.2011.0040	PRECESS Immersion Model P=Practice R=Reflection E=Education and training C=Combined with….. E=Ethnography for S=Sustainable S=Success	Part 1: Descriptive Observational Study Part 2: Review of HER via a convenience sample Aim of study was to use a program to improve SS rate and describe the rate of SSC and exclusive BR at hospital D/C	Medical Center in Southwest U.S. w/ 6,000 births per year. English speaking >18 years old expected to deliver healthy, infant vaginally or via elective scheduled C/S	IV=SSC after vaginal or C/S delivery DV= exclusive Br feeding at hospital D/C				6	Difficult to decipher results of this study

Source: © 2012, Adapted with permission from Evidence-based practice in nursing and healthcare. (p. 520), by Melnyk, Bernadette Mazurek, and Ellen Fineout-Overholt, Lippincott Williams & Wilkins, 2011.

Citation	Conceptual Framework	Design/ Method	Sample/Setting	Major Variables Studied and Their Definitions	Outcome Measurement	Data Analysis	Findings	Level of Evidence	Quality of Evidence: Critical Worth to Practice
Keeper Article 9: Facilitating Skin-to-Skin Contact in the Operating Room After Cesarean Birth									
Author Year Title County Funding	**Theoretical basis for study**		**Number Characteristics Exclusion criteria Attrition**	**Independent variables IV1 = IV2 = Dependent variables**	**What scales used - reliability info (alphas)**	**What stats used**	**Statistical findings or qualitative findings**	**Level =**	**Strengths Limitations Risk or harm if implemented Feasibility of use in your practice**
Stone, S., Prater, L., & Spencer, R. (2014). Facilitating skin-to-skin contact in the operating room after cesarean birth. *Nursing for Women's Health, 18*(6), 481-499. doi:10.1111/1751-486X.12161	Iowa Model for Evidence based Practice Quality change Lewin's Change Theory to facilitate the change in the hospital	DNP Project: Aims of project: -Develop a protocol for health care professionals roles in providing SSC in the OR -Implement the protocol -evaluate the process of implementation of the intervention	Non-emergent, full term C/S births among low risk healthy women in an inner city hospital in S.W United States	N/A	Staff survey after each time SSC occurred in the OR	N/A	N/A	7	Very applicable for use in my project

Source: © 2012, Adapted with permission from Evidence-based practice in nursing and healthcare. (p. 520), by Melnyk, Bernadette Mazurek, and Ellen Fineout-Overholt, Lippincott Williams & Wilkins, 2011.

Citation	Conceptual Framework	Design/ Method	Sample/Setting	Major Variables Studied and Their Definitions	Outcome Measurement	Data Analysis	Findings	Level of Evidence	Quality of Evidence: Critical Worth to Practice
Keeper Article 10: The Sacred Hour: Uninterrupted Skin-to-Skin Contact Immediately After Birth									
Author Year Title County Funding	**Theoretical basis for study**		**Number Characteristics Exclusion criteria Attrition**	**Independent variables IV1 = IV2 = Dependent variables**	**What scales used - reliability info (alphas)**	**What stats used**	**Statistical findings or qualitative findings**	**Level =**	**Strengths Limitations Risk or harm if implemented Feasibility of use in your practice**
Phillips, R. (2013). The sacred hour: Uninterrupted skin-to-skin contact immediately after birth. *Newborn & Infant Nursing Reviews, 13*(2), 67-72. doi:10.1053/j.nainr.2013.04.001	N/A as this is a review article	N/A	N/A	IV=Skin to skin contact w/ mother after birth DV=NB resp. rate DV=NB Oxygenation DV= NB glucose levels DV= NB temp DV= NB stress levels DV=NB blood pressure DV= NB crying DV= Maternal attachment w/ NB DV= effect on Br. Feeding rates DB= effect on duration of Br. Feeding	N/A	N/A	Normal, term newborns who are placed Skin to skin w/ mother immediately after birth make the transition from fetal to NB life w/ greater resp., temp and glucose stability and cry significantly less indicating less stress.	7 (Review Article)	Informational but no statistics used in article. Does describe the 9 instinctive stages of NM behavior

Source: © 2012, Adapted with permission from Evidence-based practice in nursing and healthcare. (p. 320), by Melnyk, Bernadette Mazurek, and Ellen Fineout-Overholt, Lippincott Williams & Wilkins, 2011.

Citation	Conceptual Framework	Design/ Method	Sample/Setting	Major Variables Studied and Their Definitions	Outcome Measurement	Data Analysis	Findings	Level of Evidence	Quality of Evidence: Critical Worth to Practice
Keeper Article 11: Holding the baby: Early mother-infant contact after childbirth and outcomes. Redshaw et al. 2014									
Author Year Title County Funding	**Theoretical basis for study**		**Number Characteristics Exclusion criteria Attrition**	**Independent variables IV1 = IV2 = Dependent variables**	**What scales used - reliability info (alphas)**	**What stats used**	**Statistical findings or qualitative findings**	**Level =**	**Strengths Limitations Risk or harm if implemented Feasibility of use in your practice**
Redshaw, M., Hennegan, J., & Kruske, S. (2014). Holding the baby: early mother-infant contact After childbirth and outcomes. *Midwifery, 30*, e177-e187.	N/A	Qualitative? (secondary analysis of a survey) Aim: Describe the timing, duration and type of contact immediately post birth in mothers who have recently given birth to healthy full term infants, and its impact on BR and maternal well-being.	Australia Survey of 5,840 women with a response rate of 30.4%. Limited to mothers of healthy full term infants.		Survey	Univariate Comp.		6	Large number of mothers surveyed.

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Citation	Conceptual Framework	Design/ Method	Sample/Setting	Major Variables Studied and Their Definitions	Outcome Measurement	Data Analysis	Findings	Level of Evidence	Quality of Evidence: Critical Worth to Practice
Keeper Article 12: Randomized Controlled Trial of Very Early Mother-Infant Skin-to-Skin Contact and Breastfeeding Status. Moore & Anderson. 2007									
Author Year Title County Funding	**Theoretical basis for study**		**Number Characteristics Exclusion criteria Attrition**	**Independent variables IV1 = IV2 = Dependent variables**	**What scales used - reliability info (alphas)**	**What stats used**	**Statistical findings or qualitative findings**	**Level =**	**Strengths Limitations Risk or harm if implemented Feasibility of use in your practice**
Moore, E., & Anderson, G. (2007). Randomized controlled trial of very early mother-infant skin-to-skin contact and breastfeeding status. *Journal of Midwifery & Women's Health, 52*(2), 116-125. doi:10.1016/j.jmwh.2006.12.002	N/A	Randomized Controlled Trial Aim: Evaluate effects of maternal-infant skin to skin contact during the first 2 hours after birth compared to standard care (holding infant swaddled) on breastfeeding outcomes through 1 month follow up.	Healthy, full-term infants during the first 2 hours after birth. Primip mothers only. Vanderbilt Univer. In Nashville TN in 2003. N=10 for skin to skin contact N=10 for standard care	IV= SSC within first 2 hours of birth DV= Infant sucking competence during the first breastfeeding DV= time to effective breastfeeding DV=Number of breastfeeding problems during the 1st month DV= breastfeeding exclusivity status at 1 month postbirth	IBFAT Tool (Infant Breastfeeding Assessment Tool) IBS is the tool used to measure breastfeeding exclusivity.		SSC infants exhibited pre-feeding behaviors earlier than control group= P <.07. SSC infants had higher initial IBAT scores than control group= P<02. SSC demonstrated effective BF twice as soon as control group= P<.04	2	Small sample size (10 in each group). Older article

Source: © 2012, Adapted with permission from Evidence-based practice in nursing and healthcare. (p. 320), by Melnyk, Bernadette Mazurek, and Ellen Fineout-Overholt, Lippincott Williams & Wilkins, 2011.

Table 3

Phillips and Fenwick Principles of Family Centered Maternity Care (FCMC)

Phillips+Fenwick developed the following ten principles of operation that summarize the philosophy of family-centered maternity care (FCMC).

- **FCMC Principle #1:** Childbirth is seen as wellness, not illness. Care is directed to maintaining labor, birth, postpartum, and newborn care as a normal life event involving dynamic emotional, social, and physical change.
- **FCMC Principle #2:** Prenatal care is personalized according to the individual psychosocial, educational, physical, spiritual, and cultural needs of each woman and her family.
- **FCMC Principle #3:** A comprehensive program of perinatal education prepares families for active participation throughout the evolving process of preconception, pregnancy, childbirth, and parenting.
- **FCMC Principle #4:** The hospital team assists the family in making informed choices for their care during pregnancy, labor, birth, postpartum, and newborn care, and strives to provide them with the experience they desire.
- **FCMC Principle #5:** The father and/or other supportive persons of the mother's choice are actively involved in the educational process, labor, birth, postpartum, and newborn care.
- **FCMC Principle #6:** Whenever the mother wishes, family and friends are encouraged to be present during the entire hospital stay including labor and birth.
- **FCMC Principle #7:** Each woman's labor and birth care are provided in the same location unless a Cesarean birth is necessary. When possible, postpartum and newborn care are also given in the same location and by the same caregivers.
- **FCMC Principle #8:** Mothers are encouraged to keep their babies in their rooms at all times. Nursing care focuses on teaching and role modeling while providing safe, quality care for the mother and baby together.
- **FCMC Principle #9:** When Mother-Baby Care is implemented, the same person cares for the mother and baby couplet as a single family unit, integrating the whole family into the care.
- **FCMC Principle #10:** Parents have access to their high-risk newborns at all times and are included in the care of their infants to the extent possible given the newborn's condition.

Table 4

Initiation of Newborn Skin-to-Skin Contact in the Operating Room Following Scheduled Cesarean Section

Introduction: The literature has shown that early skin-to-skin contact between a mother and her newborn has multiple health benefits. The mother experiences improved bonding and attachment to the newborn, higher maternal satisfaction with the hospital experience, and an increased sense of mastery and confidence in the ability to breastfeed. The newborn has improved thermoregulation, a decrease in salivary cortisol (stress) levels and improved breastfeeding initiation.

Situation: At The Ohio State University Wexner Medical Center (OSUWMC), skin-to-skin contact is frequently offered to patients who delivery vaginally, but this practice is not routinely offered to patients who deliver by Cesarean Section (C/S).

Background: Exclusive breast milk feeding rates are one of the *Perinatal Core Measures* that are reported to The Joint Commission on a quarterly basis. Despite multiple health benefits to both the mother and the newborn, hospital policies and existing practices can be a significant barrier to initiating skin-to-skin contact in the operating room.

Assessment: Despite supporting evidence and position statements by the American College of Obstetricians and Gynecologist (ACOG), the American Academy of Pediatrics (AAP) and the Association of Women's Health Obstetric and Neonatal Nurses (AWHONN) that support early skin-to-skin contact, OSUWMC has not yet implemented skin-to-skin contact in the operating room as the standard of care.

Recommendations: Beginning, Tuesday, January 26th, skin-to-skin contact should be implemented for all term, scheduled C/S's according to the established protocol. For all other C/S deliveries, skin-to-skin contact should be encouraged whenever possible providing that the mother and newborn are stable. Skin-to-skin contact and breastfeeding should be documented in the delivery summary for all patients as appropriate.

Questions: Please contact any of the following individuals……

- Ruth Labardee: ruth.labardee@osumc.edu or 614-366-1802
- Susan Hale, Tonya Brockman, Angie Gross or Tiffany Long

Table 5

Skin-to-Skin Contact FAQ

Skin-to-Skin Contact, Definition of: Skin-to-Skin contact is defined as placing a naked baby prone on the mother's bare chest. The newborn should have a hat and a diaper on, and a warm blanket should be placed across the mother and newborn.

During Cesarean Section	After Vaginal Birth or in PACU
Due to spacial constraints in the OR, typically the baby is placed horizontally across the mothers chest 	In most cases, the baby should be placed vertically on the mothers chest, between her breasts 

What are the benefits of skin-to-skin contact? There are numerous benefits to both the mother and the newborn. Benefits to the newborn include improved thermoregulation, a decrease is cortisol levels (stress hormone), decrease crying, and improved breastfeeding initiation and duration of breastfeeding. Benefits to the mother include improved attachment and bonding, improved patient satisfaction scores and greater confidence in her ability to breastfeed.

Is there anything that I should be aware of? The literature states there are no known risks associated with skin-to-skin contact. However, there is a phenomenon known as Sudden Unexpected Perinatal Collapse (SUPC). This is a condition in which a previous vigorous, spontaneously breathing newborn unexpectedly becomes apneic. Incidence of SUPC ranges between 2.6 and 38 cases per 100,000 births (Ludington-Hoe & Morgan, 2014).

- 1/3 of the cases tend to occur during the first 2 hours after birth
- 1/3 of the cases occur between 2 hours and 24 hours after birth
- 1/3 of the cases occur between 1 day and 7 days after birth

Those patients who are at high risk for SUPC include mothers who are primiparous, obese, tired and/or sedated by narcotics or magnesium sulfate. When these mothers have their newborn prone in skin-to-skin contact,

or they are breastfeeding, it is important to have someone watching over them to ensure the mother doesn't fall asleep and that the newborn is safe (Ludington-Hoe & Morgan, 2014). Even though SUPC is a rare occurrence, awareness of this phenomenon and being alert to the potential is in the best interest of both the mother and the newborn.

Why are we encouraged to administer Vitamin K to the newborn, while the mother is holding the baby? The pain associated with an injection causes distress and anxiety in the newborn. Holding the baby and/or breastfeeding at the time of the injection, makes the pain more tolerable, decreases anxiety for the newborn and enhances well-being (Thomas, Shetty & Bagali, 2011).

Table 6

Skin-to-Skin Contact Audit Tool

THE OHIO STATE UNIVERSITY
WEXNER MEDICAL CENTER

Skin-to-Skin Audit Tool

Month: _____

Date of C/S	Mom's MRN	GA	Documentation of SSC in the OR? Yes or No	Time to PACU	Names of Team Members in the OR	Follow up Completed if Applicable

# of Cases with Documented SSC _____ ÷ # Audits Completed _____ = Compliance _____

Figures

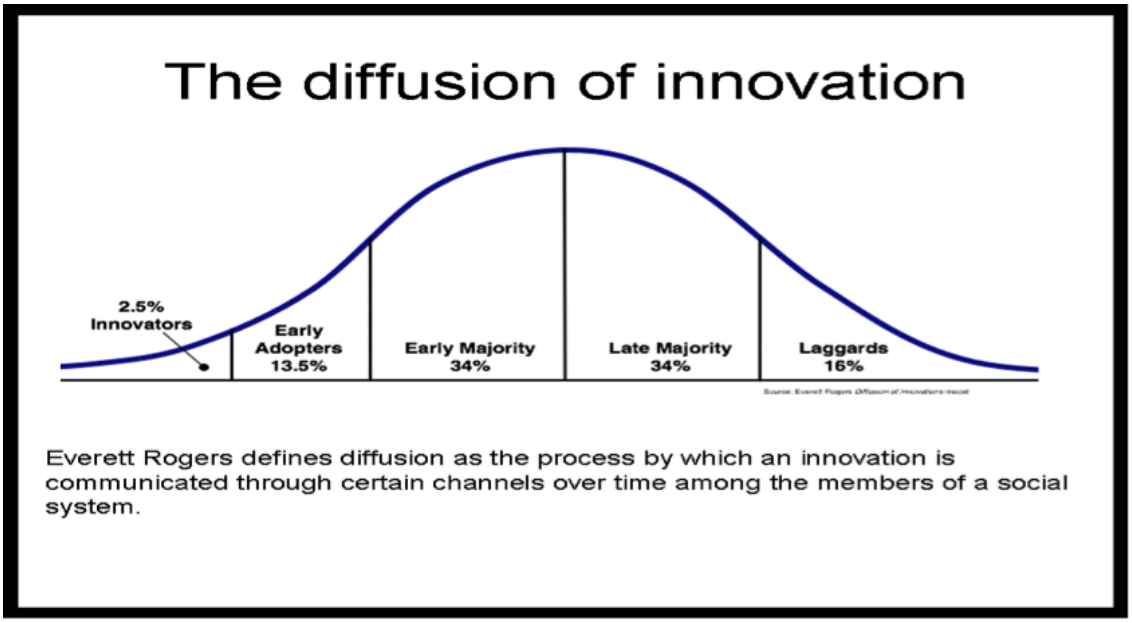

Figure 1. Diffusion of Innovation Theory

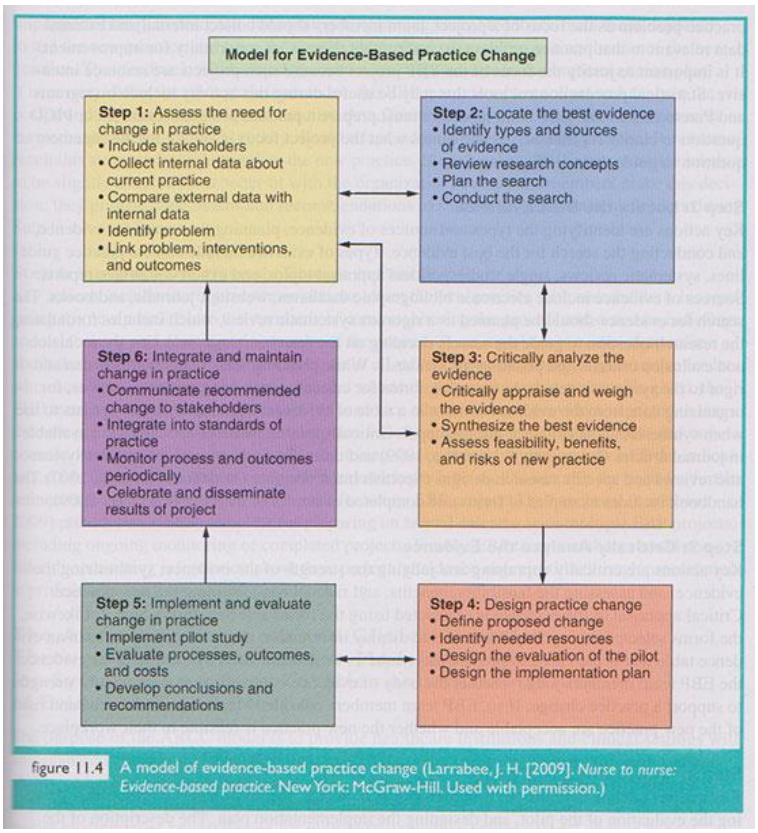

Figure 2. Model for Evidence-Based Practice Change

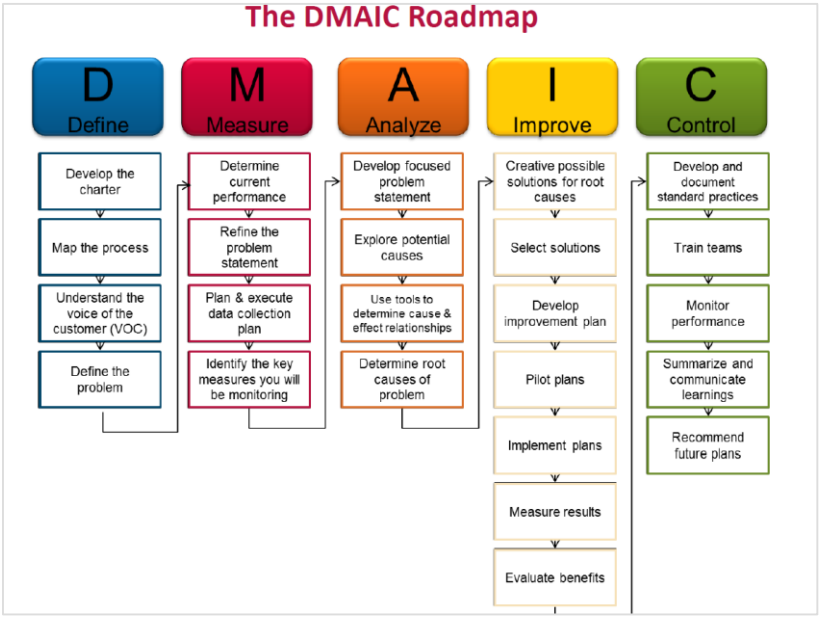

Figure 3. DMAIC Process

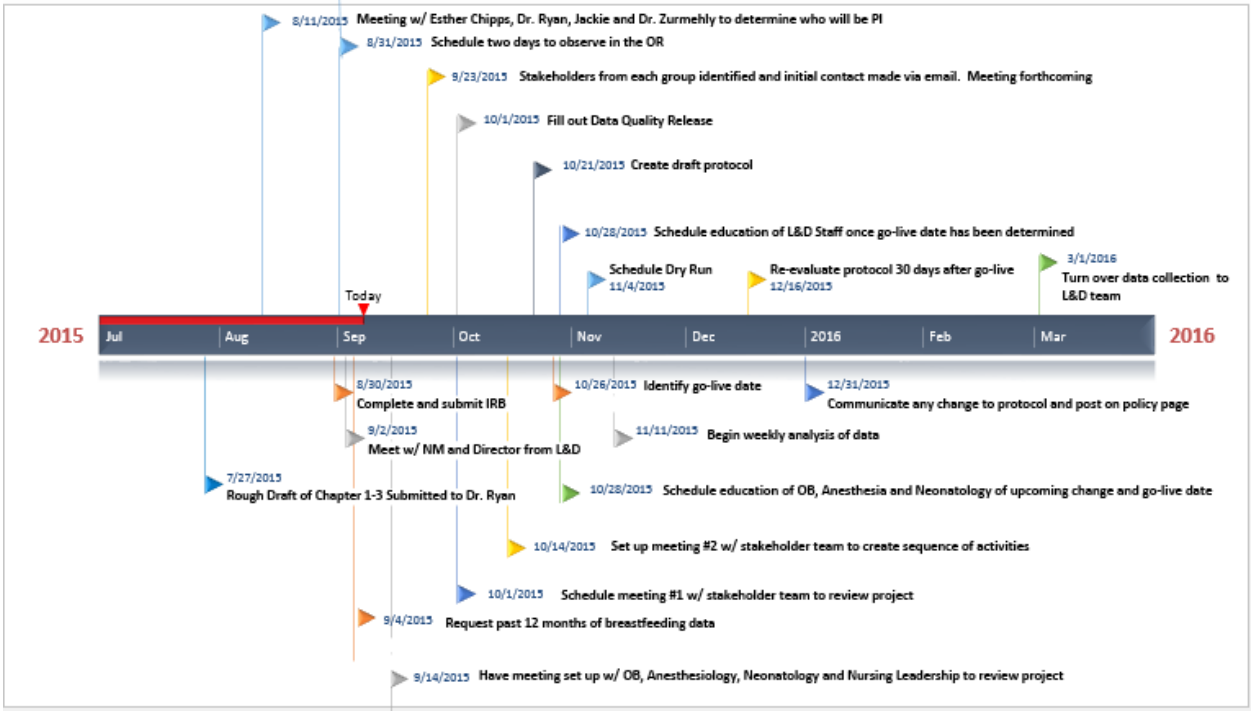

Figure 4. DNP Project Timeline